



旺宏電子股份有限公司

# 2015 Macronix International Co., Ltd. Corporate Social Responsibility Report



June 2016

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# 1. Message from Macronix Executives

## 1.1.A Message from the Chairman and CEO

As the world's- leading manufacturer in the Non-Volatile Memory (NVM) market, Macronix provides a full range of NOR Flash, NAND Flash, and ROM products. By upholding its business philosophy of "honesty," Macronix is not only the largest global manufacturer and supplier of the most advanced ROM, but also the second largest global leading manufacturer and the No. 1 Asian brand NOR flash memory provider. Regarding its NAND flash products, although Macronix only entered the market in the last few years, the Company has already achieved an exponential growth in 2015 compared to the previous year, and we foresee substantial room for improvement in 2016.

As an innovator of the memory industry, Macronix is actively investing in the research and development (R&D) of prospective memory chips. The widespread application of Macronix products and market development trends have provided Macronix with two major advantages in advanced processing technologies and complete product lines, which enables it to continuously refine and develop new products. In addition to accelerating the manufacturing of 3D NAND flash, we continue to offer a complete system integration solution to customers and endeavor to meet the increasing demands for Internet of Things and smart wearable devices by introducing miniaturized, wide-voltage/ultra-low power consumption, and highly reliable products. In 2015, Macronix launched the fastest SPI NOR OctaFlash, which meets the demands of the Automotive Electronics market. For the Aerospace and Defense (A&D) market that imposes strict reliability requirements, Macronix successfully developed the first high-performance Quad SPI NOR Flash. Following years of cultivation and development, the I/A/I (industrial/automotive/infrastructure) domains will be the main source of growth for 2016. Macronix has won the trust of its customers from all over the world with the best product quality and commitment in sustainable management.

Macronix actively constructed a complete green electronic product supply chain management system, using standards that are superior to regulatory requirements to enhance our performance in environmental protection, occupational safety, and health. To expand our social care and respond to global trends, Macronix prohibits the use and purchase of conflicting minerals while tracks the sources of gold (Au), tantalum (Ta), tin (Sn), and tungsten (W) to ensure that these materials come from eligible refineries and

not "conflicting mineral zones". Macronix has also invited supply chain partners to sign the Supplier Social Responsibility and Business Ethics Agreement, and conducted certification, training, and evaluation of supply chain management system. In 2015, Macronix conducted scenario simulations on ten major crises and implemented a project for improving 15 risk items in order to reduce the potential impact of business disruption.

In terms of strategies for talent training, Macronix not only strives to build a warm, happy work environment to transform itself into a healthy, happy company for employees to enjoy a balance between work and living, the Macronix Education Foundation also fosters technology professionals by sponsoring the Macronix Golden Silicon Awards and Macronix Science Awards events for 15 consecutive years; these competitions have attracted over 20,000 teachers and students to participate. Envisioning the development trends of the industry, Macronix continues to incorporate a wide variety of applications such as green energy, biomedicine, robotics, smart homes, and IoT into these competitions to further stimulate domestic research. These studies provide long-term inspirations to domestic scholars in exploring science and developing the potential to innovate.

Macronix is fully dedicated to promoting Corporate Social Responsibility (CSR). Macronix was the first semiconductor firm in Hsinchu Science Park to receive the SA8000 Corporate Responsibility Management Systems certificate. Our CSR reports are compiled according to the Global Reporting Initiative (GRI), G4 Guidelines and Accountability 1000 Assurance Standards (AA1000). During the past three years, Macronix has achieved a Gold CSR Rating on the EcoVadis cooperative platform, which is assisted by global corporations in monitoring suppliers' sustainable performance. Macronix was ranked in the top 5% of all suppliers. The evaluation results of EcoVadis served as the key reference for over 20,000 manufacturers throughout the world to evaluate and select their suppliers. Macronix's ability to obtain a gold rating every year reflects the Company's outstanding performance in CSR implementation.

Macronix strictly adheres to a high standard of corporate governance practice. We have established positive relationships with our stakeholders including shareholders, employees, the society, customers, and suppliers, and we also ensured that the interests of all of our stakeholders are balanced. We have devised the Code of Business Conduct and Ethics, requiring our employees to exhibit honest and ethical conduct when performing their duties, as well as to adhere to the regulations of this Code. In 2015, the Taiwan

Stock Exchange placed Macronix in the top 5 companies that received outstanding performance in the first corporate governance evaluation. This validates Macronix's efforts in implementing corporate governance, emphasizing the importance of shareholder equity, maintaining operational transparency, and its excellent performance in risk management and information disclosure.

Macronix pursues corporate and social sustainable development. We foresee the potential development of various products such as IoT/wearable devices, automotive/industrial products, as well as infrastructures, all of which will be the main driving force of future business growth. We will continue to make advancements to the technologies and products we own, with hopes of creating greater economic value. In addition to cultivating our main business activities, we strictly adhere to standards of business ethics and embrace honesty and righteousness. We will endeavor to be a good corporate citizen, persist in our commitment to environmental sustainability, and do our best in contributing to the society, thereby improving the quality of life for humans.

**Macronix Chairman & CEO**



## 1.2. A Message from the President

As a leading provider of non-volatile memory, Macronix adheres to our corporate values of "innovation, quality, efficiency, service, and team work" and persevere in our business philosophy to deliver high-quality, innovative, and performance-driven products to our customers with world-class R&D and manufacturing capabilities.

In addition to creating innovative products and ensuring the continuous growth of its main businesses, Macronix also anticipates fulfilling its role as a global citizen and becoming the benchmark company in green technology. Regarding environmental protection, safety, and health systems, we actively promote energy and water conservation, as well as waste reduction through our management system; we also invest in renewing and maintaining various types of equipment for preventing air, water, waste, and noise pollutions. In the first half of 2015, Taiwan experienced the worst drought since 1947. Despite our need for a considerable volume of water in the production process, we know how important water resources are; therefore, Macronix remained dedicated to promoting water conservation. Thanks to the efforts of our 12-inch Fab 5 plant, Macronix was honored as the manufacturer in the Hsinchu Science Park that demonstrated excellent water-saving performance in 2015.

Besides mitigating environmental impact by regulating our daily business operations, we also proceeded from the source, incorporating environmental protection concepts into our product designs. Macronix's green products not only conform to EU's RoHS directives and the requirements for substances of very high concern (SVHC), but also take into consideration customer needs. Furthermore, we prohibit the use of conflict minerals, integrate the primary members of a product supply chain to construct a comprehensive green electronic product supply chain management system, and implement risk assessment of suppliers (RAS) to ensure that the entire supply chain could jointly implement green practices.

Macronix follows international trends in environmental protection, and procures equipment with Eco Labels (implemented by the Environmental Protection Administration) or Energy Star labels (promoted by the Ministry of Economic Affairs). Therefore, we were honored as a manufacturer of excellence that promotes green consumption and implements green procurement by the Environmental Protection

Administration, and we were also regarded as a private manufacturer and group in Hsinchu who performed exceptionally in green procurement.

We uphold the belief that employees are fundamental to the Company and are the most precious asset; therefore, we attach extreme importance to employees' quality of life and development and issues such as health and safety. We continuously build Macronix into a healthy, happy company where a wide variety of software and hardware facilities such as diverse learning maps and learning environment are established for cultivating our employees. To care for the physical and mental health of our employees, we continued to promote the Sports Day program that encourages employees to develop the habit of exercising regularly while balancing their work and life to create the perfect vision with the Company. In 2015, Macronix was awarded the "Excellent Healthy Workplace - Health Leadership Award" and won the Health Promotion Badge - Top Honor for an Accredited Healthy Workplace, which further confirmed Macronix's commitment in employees' physical and mental health.

CSR has become a crucial sustainable development topic. The Macronix CSR Report faithfully discloses our persistence and determination in advancing toward long-term corporate sustainable management. Macronix will incorporate the concept of CSR into its management system, internalize this concept into its corporate culture and value system, continue to strive to maximize benefits for its employees, customers, partners, and shareholders, and aim to produce a mutually beneficial outcome for the company, environment, and society.

**Macronix President**



## 2. Macronix

Macronix, a leading integrated device manufacturer in the Non-Volatile Memory (NVM) market, provides a full range of NOR flash, NAND flash, and ROM products. With its world-class R&D and manufacturing capabilities, Macronix continues to deliver the highest-quality, innovative and performance driven products to its customers in the consumer, communication, computing, automotive, networking and other segment markets.

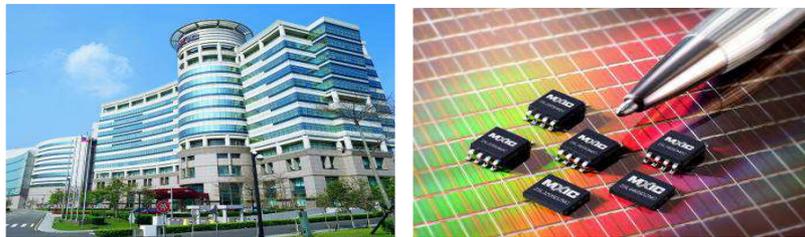
Macronix was founded in Taiwan's Hsinchu Science Park in 1989; since its inception, the Company continues to leverage the competitive advantages of its products and constantly strives to enhance our production and manufacturing capabilities in order to deliver high-quality products and services. Therefore, we successfully established long-term, mutually beneficial strategic partnerships with large, world-class manufacturers. Macronix has adhered to high standards of corporate governance, while actively maintaining investor relations and advocating CSR. Macronix has been awarded Corporate Governance System Evaluation Certification for companies traded publicly and over the counter, and was the first semiconductor manufacturer in the Hsinchu Science Park to receive the SA8000 Corporate Responsibility Management Systems certificate.

Each year, Macronix allocates 10 to 12% of its revenue to research and development, the results of which have been published in technical journals as well as multiple international academic conferences such as IEDM and ISSCC over the years. Macronix currently holds intellectual property rights over 5,700 key international technologies and patents. We have formed an alliance with leading high-tech firms across the world to collectively conduct research for developing technologies for Phase Change memories. Macronix has also announced the world's first flash prospective technology, BE-SONOS™. All of these developments are aimed at providing solutions for the next generation of non-volatile memories.

Macronix currently owns one 12-inch wafer fab (Fab 5), one 8-inch wafer fab (Fab 2), and one 6-inch wafer fab (Fab 1). Macronix designs and fabricates its nonvolatile memory products in Fab 5 and Fab 2. Fab 1 focuses on strategic foundry businesses for niche analog and logic products.

Macronix spun off its logic products unit and established subsidiaries so that the Company's operations could better focused on delivering optimized performance. Since then, the subsidiaries and Macronix have cooperated in the R&D of mobile platform solutions; expanding the Group's overall integration capabilities.

Looking ahead, Macronix will continue to research and develop new technologies to stay ahead of the competition, while continue with new product development and enhancing its technologies, quality, and services in order to increase its competitiveness and profitability. We will do our utmost to deliver sustainable growth for Macronix while also enhancing Taiwan's competitiveness worldwide.



旺宏電子股份有限公司  
MACRONIX INTERNATIONAL CO., LTD.

## 旺宏的使命及宣言 MISSION STATEMENT

在當今或未來，旺宏電子矢志成為半導體產業的領導供應廠商，以精湛的技術、最高的品質與可靠的服務，提供創新的客戶／應用導向解決方案與非揮發性記憶體產品。

Macronix is and will continue to be a leading provider of innovative customer/application driven system solutions and non-volatile memory requiring state-of-the-art technology, the highest quality and trustworthy service.

董事長兼執行長  
Chairman & CEO

吳敏恭 *Wu Mengcong* 2011/07/28

## A Glance at Macronix

Highlights		<ul style="list-style-type: none"> <li>✓ One and only TW-based non-volatile memory provider with own brand and global competitiveness</li> <li>✓ Devoted to long term investments in R&amp;D and proprietary technologies</li> <li>✓ Owns complete intellectual property portfolio and has the capability to provide integrated solutions</li> </ul>
Date Established		December 1989
Publicly listed		March 1995
2015 revenue		NT\$20.928 billion
No. of employees (individuals)	General employees	3,529
	Management level (manager and above)	692
Fab capacity		FAB 1 (6") ~37K
		FAB 2 (8") ~55K
		FAB 5 (12")~20K
ROM market share		No. 1 worldwide
NOR Flash market share		No. 3 worldwide (No. 2 worldwide for Serial NOR Flash)

## 2.1. Products and Services

Macronix, an integrated device manufacturer in the Non-Volatile Memory (NVM) market, provides a full range of NOR Flash, NAND Flash, and ROM products.

With its R&D and manufacturing capabilities, Macronix continues to deliver high-quality, innovative and performance driven products to its customers in the consumer, communication, computing, automotive, industrial, and other segment markets.

Macronix is one of the few companies capable of providing a comprehensive lineup of densities for Serial NOR Flash products from 512 Kbit to 1 Gbit. We also have miniature NOR Flash products that can adequately fulfill the demands for lightweight and miniature portable electronic products. Moreover, our self-developed Single-Level Cell (SLC) NAND flash products with superior quality and reliability meet the needs of a high level, embedded market. We also provide KGD (Known Good Die) products to meet the needs of SIP (System in Package) solutions. In terms of read-only memory, we have begun mass-production of 32 nm XtraROM<sup>®</sup> products.

In 2015, Macronix has developed an ultra-low power/ wide range vcc flash, which saves more than 60% of power compared with conventional flash devices to fulfill the demands of wearable smart device markets. We also introduced the industry's fastest SPI NOR OctaFlash that satisfies the requirements of automotive infotainment, telematics, and digital cameras for flash memory with high-capacity, fast-transmission, and high reliability.

## Macronix Products and Applications

Product Type	Key products	Applications and Functions
Non-Volatile Memory IC	Read-only Memory (Mask ROM/XtraROM <sup>®</sup> )	Video game cartridges, electronic dictionaries, printers, personal entertainment devices, electronic toys, etc.
	NOR Flash Memory	Mobile phones, set-top boxes, personal computers, digital cameras, MP3 players, CD-ROM drives, printers, hard drives, network devices, tablet PCs, wireless communication devices (Bluetooth, WLAN), arcade games.
	NAND Flash Memory	Mobile phones, set-top boxes, TVs, digital cameras, MP3 players, printers, hard drives, network devices, tablet PCs, wireless communication devices (Bluetooth, WLAN), arcade games.
Wafer Foundry Services	Sub-micron logic process/pressurized CMOS and BCD process	Provide pressurized CMOS manufacturing technology; provide service for power management and LED / LCD driver IC services.
	Embedded ROM/Flash/MTP/OTP Process	Provide integrated embedded ROM/Flash/MTP/OTP technology to strategic clients.

## Scope of Application

<p>Computers</p> 	<p>Personal computers, notebooks, tablets, computer peripherals/accessories, and printers</p>
<p>Consumer</p> 	<p>TV/MOD, wearable devices, drones, sports cameras, digital cameras, smart home appliances, video game systems, Pachinko, toys, audiovisual tools</p>
<p>Communication</p> 	<p>Mobile networks, home networks, enterprise networks, telecommunication networks</p>
<p>Automotive</p> 	<p>Advanced driving assistance systems, infotainment, telematics, clusters</p>
<p>Industrial</p> 	<p>Automation, smart building, smart grid, smart medical device, transportation, POS, M2M</p>

## Key Markets

Macronix is export-oriented, with Japan as our largest market. Japan is a prolific manufacturer of gaming systems and consumer electronics worldwide; therefore it has strong and consistent demand for high quality IC components.

## Product Sales and Market Share

Product	2015	
	Sales turnover	Sales ratio
NOR Flash Memory	13,241,519	65%
NAND Flash Memory	1,589,543	8%
Read-only Memory (ROM)	3,164,896	15%
Wafer Foundry Services (FBG)	2,539,285	12%
Others	2,186	0%
Total	20,537,429	100%

Unit: NT1,000

MaskROM/XtraROM<sup>®</sup>, one of Macronix' main products, has long been the global market share leader. According to 2015 OTP ROM global market share statistics, we are ranked number one in the global ROM market share.

Type	Rank
Read-only Memory (ROM) (with over 50% market share)	1. Macronix
	2. OKI Semiconductor
	3. Others

Macronix' Serial NOR flash has been a popular choice with our clients, and has accelerated our global market share in NOR flash products to second place worldwide, with our Serial NOR flash ranking first in the world.

## 2015 NOR Flash Market Share

Type	Rank
Serial NOR Flash (33.8% market share)	1. Macronix
	2. Winbond
	3. Gigadevice
	4. Micron
	5. Cypress (Spansion)
NOR Flash (21.4% market share)	1. Cypress (Spansion)
	2. Macronix
	3. Micron
	4. Winbond
	5. Gigadevice

Source: iHS, Q1 2016

## 2.2.Global Operations Centers



## 2.3. Macronix CSR Milestones

Time	Major Achievement
2000	<ul style="list-style-type: none"> <li>• Held the first Macronix Golden Silicon Awards - Semiconductor Design and Application Competition</li> </ul>
2001	<ul style="list-style-type: none"> <li>• Established the Macronix Education Foundation</li> </ul>
2002	<ul style="list-style-type: none"> <li>• Macronix Education Foundation held the first "Macronix Science Awards"</li> </ul>
2004	<ul style="list-style-type: none"> <li>• Received the "2004 Distinguished Enterprise of Energy Conservation Award" from the Bureau of Energy, Ministry of Economic Affairs</li> <li>• First firm in Hsinchu Science Park to complete comprehensive inspection and verification on greenhouse gases</li> <li>• Established the Macronix Science Awards Association</li> </ul>
2005	<ul style="list-style-type: none"> <li>• Received ISO 14001:2004 Environmental Management System Certification from British Standards Institute</li> <li>• Macronix's Fab 2 won the 14th Republic of China Corporate Environmental Protection Award for four consecutive years</li> </ul>
2006	<ul style="list-style-type: none"> <li>• Received green product certification from international brands including SONY, CANON, and LG for compliance with RoHS requirements</li> </ul>
2007	<ul style="list-style-type: none"> <li>• Received the IECQ QC080000 Hazardous Substance Process Management System Certification</li> <li>• Received the "Outstanding Award of Greenhouse gases Emissions Reduction" from Bureau of Industrial Development, Ministry of Economic Affairs</li> <li>• Awarded ISO 14064-1 "Certificate of Greenhouse gases Emission Verification" by the British Standards Institute</li> <li>• Credited with "CG6002 Corporate Governance Certification" by Taiwan Corporate Governance Association</li> </ul>

Time	Major Achievement
2008	<ul style="list-style-type: none"> <li>• Became the first semiconductor manufacture to receive the SA8000 Corporate Responsibility Management Systems Certification</li> <li>• Donated NT\$300 million to National Tsing Hua University to build the Macronix Building (Learning Resource Center)</li> <li>• Donated CNY 5 million to help victims of Sichuan earthquake</li> <li>• Helped push upstream and downstream supply chain partners to implement Electronic Industry Citizenship Coalition Code of Conduct (EICC)</li> <li>• Certified with new OHSAS 18001: 2007 certification from SGS</li> <li>• Certified with Taiwan Occupational Safety and Health Management System (TOSHMS) Certification</li> <li>• Recognized of "2007 Green Procurement Outstanding Award" by Environmental Protection Administration</li> </ul>
2009	<ul style="list-style-type: none"> <li>• Awarded of National Industrial Safety &amp; Health Awards</li> <li>• Became the first semiconductor manufacture to receive safety certification for a top quality enterprise</li> <li>• Donated NT\$100 million to aid victims of Typhoon Morakot in Taiwan</li> <li>• Received the fifth annual Global Views Monthly Magazine CSR Award for its outstanding performance in Corporate Social Responsibility</li> </ul>
2010	<ul style="list-style-type: none"> <li>• Received the sixth annual Global Views Monthly Magazine CSR Award top honor (Five Star rating)</li> <li>• Received the 2010 CommonWealth Magazine Corporate Citizenship Award</li> <li>• Donated an additional NT\$100 million for the Macronix Building at National Tsing Hua University</li> <li>• Received the Employment Creation Contribution Award from the Executive Yuan</li> </ul>
2011	<ul style="list-style-type: none"> <li>• Donated NT\$30 million to Japan Earthquake Relief Efforts</li> <li>• Received the Employment Creation Contribution Award from the Executive Yuan</li> <li>• Honored as one of the Top 100 Taiwan Brands by Ministry of Economic Affairs, ROC</li> <li>• Once again received CommonWealth Magazine Corporate Citizenship Award</li> <li>• Honored with 2011 National Invention and Creation Award, Contribution Award</li> </ul>

Time	Major Achievement
	<ul style="list-style-type: none"> <li>• Received CG6006 Corporate Governance Evaluation Certification</li> <li>• Received Employee Assistance Plan Outstanding Business Award from the Council of Labor Affairs, Executive Yuan</li> </ul>
2012	<ul style="list-style-type: none"> <li>• Received the eighth annual Global Views Monthly Magazine CSR Award</li> <li>• Once again received CommonWealth Magazine Corporate Citizenship Award</li> </ul>
2013	<ul style="list-style-type: none"> <li>• Official opening of the new Learning Resource Center at National Tsing Hua University – the Macronix Building</li> <li>• Macronix Education Foundation was awarded by the Ministry of Education of Outstanding Educational Foundation</li> </ul>
2014	<ul style="list-style-type: none"> <li>• Received the first "Work-Life Balance Award" presented by the Ministry of Labor in recognition of the Company's performance in care and support for employee families and the health and safety of its employees</li> <li>• Macronix's Fab 5 plant received the 2014 Award of Excellence in Energy Conservation from the Bureau of Energy, Ministry of Economic Affairs, ROC</li> </ul>
2015	<ul style="list-style-type: none"> <li>• Awarded with "Excellent Healthy Workplace" from Health Promotion Administration, Ministry of Health and Welfare</li> <li>• The Taiwan Stock Exchange listed Macronix as one of the companies in the top 5% that received outstanding performance in the first corporate governance evaluation</li> </ul>

## 2.4. External Participations

Name	Title	Action/Contribution
Taiwan Electrical and Electronic Manufacturers' Association	Member	Macronix offers suggestions, promotes collective interests of fellow members, functions as a bridge between the industry and the government, and promotes industry development.
Allied Association for Science Park	<ol style="list-style-type: none"> <li>1. Director</li> <li>2. Convener of the Health and Safety Committee</li> <li>3. Convener of the Public Relations Committee</li> </ol>	<p>Macronix contributes to the discussion, decision, and execution of the association's operations.</p> <p>Macronix leads the discussion, decision, and execution of work related to occupational safety and health and risk management in the science park.</p> <p>Macronix promotes public relations for the science park and functions as a communication platform with the media.</p>
Chinese National Association of Industry and Commerce, Taiwan	Director	Macronix offers suggestions, promotes collective interests of fellow members, functions as a bridge between the industry and the government, and promotes industry and commerce development.
Friends of Special Police Second Headquarter, National Police Agency	Committee Members	Macronix cooperate with police to enhance and promote crime control and prevention.
Taiwan After-care Association, Hsinchu	Standing director	Macronix helps ex-prisoners in rehabilitation return to the workplace and start new lives.
Ministry of Labor, Taiwan Occupational Safety & Health Management System (TOSHMS), North consortium	President of North consortium	<ol style="list-style-type: none"> <li>1. Macronix shares its experience from winning the National Labor Safety Award.</li> <li>2. Macronix promotes cross-industry education and awareness of labor safety issues and inspires creativity for promoting worker safety.</li> </ol>

### 3. Sustainable Development Strategy

The key electronic components produced by Macronix have enriched human lives. As member of the global market, we insist on sustainable management, and we are committed to our responsibilities as a corporate citizen of the world. We strive to create a better future by leveraging our advanced technological capabilities to assist our clients in creating excellent products.

To realize sustainable corporate management, Macronix continues to elevate shareholder rights and is committed to our duties as a global corporate citizen as we care for our environment, and conservatively use the natural resources. We have proactively pursued all aspects of the Electronic Industry Citizenship Coalition<sup>®</sup> Code of Conduct (EICC<sup>®</sup> CoC) and contribute to society through scientific education and promotion.

To fulfill our commitment, we strive to

- ◆ Go beyond enhancing our environmental, occupational safety and health, and complying with regulatory requirements
- ◆ Nurture a working environment with well-planned and well-run human resources management system and practices
- ◆ Strengthen Green and Sustainable Supply Chain management system to fully meet applicable international regulations customer standards
- ◆ To intensify our commitment to social responsibility and meet applicable global regulations and customer standards, we forbid any use of the ‘conflict mineral’ in our products. Macronix implement due diligence on the metals used, including Tantalum (Ta), Tin (Sn), Tungsten (W), and Gold (Au) to make sure that these metals are sourced only from independently validated smelters/refiners. To meet the customers' requirement, we will continue to require our subcontractors/suppliers to achieve non-use of 'conflict mineral'.
- ◆ Broaden the scope of social contribution to the education of the sciences, and encouraging innovation and creativity to the younger generation

## 3.1.Sustainable Development System

### **Corporate Social Accountability Policy**

Macronix's first issue of Corporate Social Accountability (CSA) Policy was approved in 2008 by the president of the Company and published on the Company's electronic bulletin board. All of our new employees must receive SA8000 and EICC CoC training. In particular, the CSA Policy requires Macronix to protect: labor rights, respect human rights, provide a safe, healthy, and amiable working environment, conservatively use the natural resources, promote science education, encourage innovative research and development, protect shareholders' rights, actively contribute to society, and persist in sustainable management.

CSA Policy\* implemented by Macronix comprises the following:

- (1) Fully comply with national laws or regulations, the agreed customer requirements, and the applicable social responsibility requirements that subscribes.
- (2) Prohibit employing of child labors, nor engaging in involuntary labors.
- (3) Conduct the Due Diligence on our suppliers/subcontractors, including service provider.
- (4) Provide our employees a safe, healthy and amiable working environment.
- (5) Respect the freedom of collective bargaining and association, and do not allow any discrimination on racial difference, religious belief, and gender, etc.
- (6) Esteem our employees, and do not allow ruthless punishment measures.
- (7) Act honestly and groundedly, ethically, and refuse any means of improper advantage violate business integrity.
- (8) Comply with the SA8000 Social Accountability standard as well as the Electronic Industry Citizenship Coalition Code of Conduct (EICC® CoC), and continue improving through the management system.

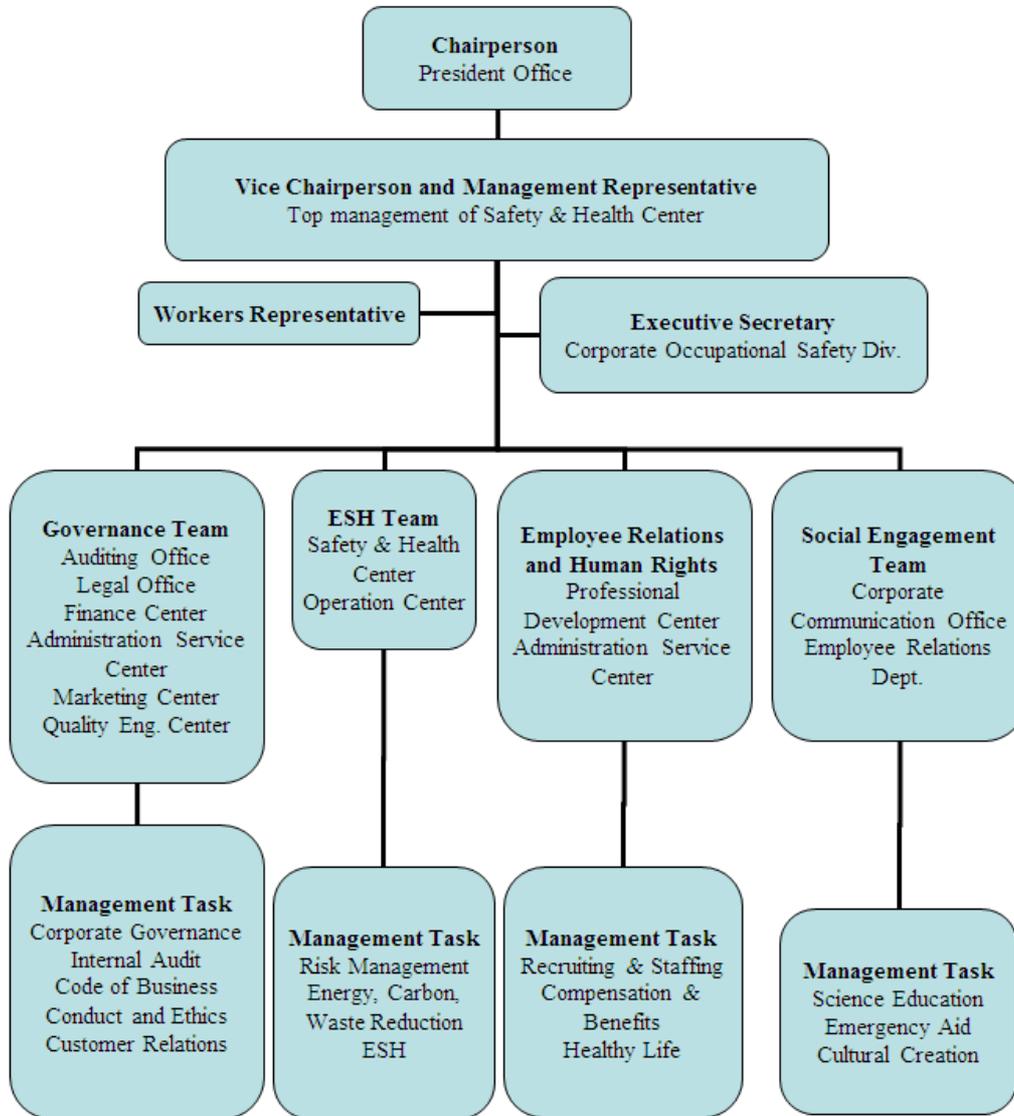
\*: This version was revised on September 17, 2015

## **Corporate Social Responsibility Organization**

Macronix's President currently serves as a member of the Board of Directors. The Company's Social Performance Team (SPT) comprises the President as the chairperson, the highest executive of the Safety & Health Center as the management representative, and the representatives of the Company's cross-department center or business group as the committee members. They play a role in encouraging the performance team to continuously increase its commitment to CSR-related tasks, ensure Macronix to comply with company and customers' relevant regulations, integrate cross-department resources for promoting and maintaining the effective operation of CSR, and provide employees with operational recommendations and consultation services to maintain and continuously improve the Company's operating systems.

Macronix's CSR Report Execution Task Force is also based on the Social Performance Team, gathering relevant departments since 2012 and encouraging them to voluntarily compile Macronix's first CSR Report, and this practice is still implemented today.

## CSR Report Execution Task Force Structure



## 3.2. Stakeholder Engagement

### 3.2.1. Stakeholder Identification and Interaction

Macronix recognizes that it is necessary to engage in long term conversations with stakeholders to increase our understanding of the community and thus make proper decisions and reduce conflicts with society.

Macronix continues to build a robust CSR value chain system and work with our employees and corporate partners to understand and respond to stakeholders' expectations toward Macronix's fulfillment of social responsibilities, while also serving as a learning tool for the company to learn more about trends, risks and development opportunities. The engagement of stakeholders will help us to realize our promises into actions that will bring about a positive contribution to society and the environment. Although this is a long term challenge, Macronix is committed to continue making efforts in integrating our supply chain and cooperating with governance policies and guidelines to accomplish the CSR goals.

Stakeholders referenced to in our CSR reports are identified according to the requirements specified by the TWSE regarding stakeholders for listed companies, by interviewing personnel from the public relations office, shareholder services office, and related departments, and by referencing the level of concern, responsibilities, influence, diverse perspectives, and tension identification pertaining to stakeholders.

### Interactions and Responses to Macronix's Stakeholders in 2015

Stake holders	Interaction and communication method	Subjected to Influence (V) or Concern (*)			Issues of concern
		Economic	Environment	Social	
Investors	1. Online investor conference held quarterly 2. Shareholders' meetings are held in June of each year 3. Participate in random roadshows and investment forums	V *	V *	*	1. Economic Performance 2. Corporate Governance 3. Company image
Customers	1. Customer questionnaire and response 2. Period/random customer audits 3. Conduct customer satisfaction surveys	*	*	*	1. Product price and quality 2. Hazardous substance management 3. Customer privacy 4. Social and ethics

Stake holders	Interaction and communication method	Subjected to Influence (V) or Concern (*)			Issues of concern
		Economic	Environment	Social	
	every two years				management (including conflict minerals management) 5. Supply Chain Management 6. Process innovation and R&D 7. Greenhouse gases emissions 8. Business Continuity Plan (BCP)
Employee	1. Various open-discussion meetings held periodically 2. Established the "Suggestion Box" mailbox to answer employees' questions 3. Publishing the "Macronix Garden" magazine quarterly 4. Set up printed copies and electronic bulletin boards to communicate information 5. Setting up Employee Relationship Management Portal to maintain good labor relations	V *	V *	V *	1. Economic Performance 2. Gas emissions 3. Employment 4. Forced or compulsory labor 5. Social legal compliance
Supplier/contractor	1. Annual supplier meeting held to convey major	V *	V *	V *	1. Economic Performance 2. Gas emissions

Stake holders	Interaction and communication method	Subjected to Influence (V) or Concern (*)			Issues of concern
		Economic	Environment	Social	
	corporate policies and messages 2. Annual supplier audit conducted to ensure supplier quality 3. Periodic training courses provided to suppliers				3. Occupational health and safety 4. Non-discrimination 5. Social legal compliance 6. Customer health and safety
Local communities	1. Dedicated contact windows to communicate with local citizens 2. Participating in discussion on matters of concern to local residents by invitation 3. Donating prizes for major holiday events 4. Surroundings of employee dormitory cleaned periodically to maintain a good environment		V *		1. Pollution Prevention
Media	1. Holding press conferences 2. Releasing public announcements and enhancing effects of interactions with the media	*	*	*	1. Financial summary 2. New product R&D 3. Details of various activities organized by the Company 4. Response to regulatory requirements 5. Labor issues 6. Remuneration for directors and

Stake holders	Interaction and communication method	Subjected to Influence (V) or Concern (*)			Issues of concern
		Economic	Environment	Social	
					supervisors
Government	<ol style="list-style-type: none"> <li>1. Continuing to comply with requirements by governments of all levels and abiding by laws and regulations</li> <li>2. Continuing to maintain good interactions with local governmental institutions</li> <li>3. Providing constructive advices to governmental institutions as reference for policy implementation and legislative establishment</li> </ol>	*	*	*	<ol style="list-style-type: none"> <li>1. Legal compliance</li> <li>2. Participation in development of public policies (e.g. greenhouse gases, climate change, and water resources)</li> <li>3. Economic Performance</li> </ol>
Students	<ol style="list-style-type: none"> <li>1. Release posters and campus advertisements related to the Macronix Golden Silicon Awards and Macronix Science Awards every year</li> <li>2. Communicate via telephone/email, and Macronix Science/Golden Silicon Awards Association</li> </ol>			V *	<ol style="list-style-type: none"> <li>1. Macronix Science Awards</li> </ol>

### 3.2.2. Identifying and Ranking Material Aspects

#### Relevant Issues

In order to fully understand issues that are of concern to both internal and external stakeholders, Macronix's CSR Report Execution Task Force gathers CSR-related issues that are of concern to our stakeholders through interacting and gathering the responses of stakeholders, conducting questionnaire surveys, recording meeting minutes, collecting opinions, performing interviews, and sharing engagement experiences. After issues are compiled, key issues are then identified and ranked in this year's CSR report by using the evaluation method that is adopted by the task force.

#### Stakeholder Opinions Compiled for the 2015 CSR Report

Stakeholder	Relevant Issues Compilation Method	Remarks
Investors	Voice recordings, meeting minutes	Directly listed under material aspect
Customers	Experience of engagement, opinions and interviews	Directly listed under material aspect
Employee	Questionnaire survey	Filled out by the representatives of labor management conferences
Suppliers	Questionnaire survey	Distributed to and completed by suppliers on August 21, 2015
Local communities	Experience of engagement, opinions and interviews	Neighborly visits, feedback opinion
Media	Engagement experience	-
Government	Engagement experience	Issues which influence legal compliance are listed as material aspects
Students	Engagement experience	-

## **Ranking**

Qualitative analysis, quantitative assessment, and discussions are integrated to rank the effects of CSR issues on the evaluation and decision-making of stakeholders (hereafter referred to as "degree of concern"), and to rank the significance of economic, environmental, and societal impacts (hereafter referred to as "degree of impact").

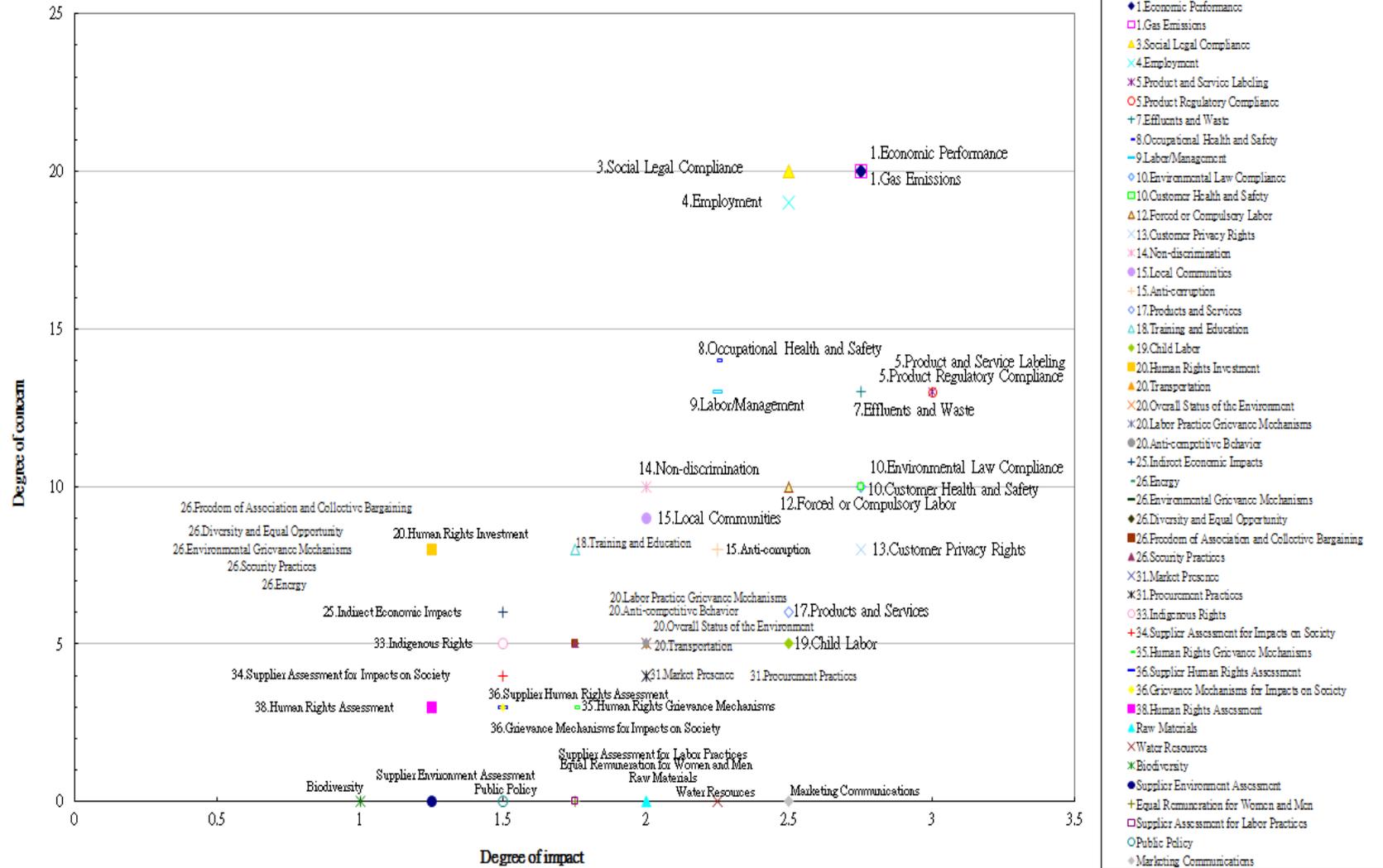
Degree of concern is rated according to the questionnaire on stakeholders as well as opinions gathered from stakeholders. For quantitative assessments such as surveys, aspects under every category that have the highest score are given 5 points, followed by 4 and 3 points. Aspects with less than the fourth highest score are given no points. For qualitative assessments (e.g., those that are based on engagement experience, opinions and interviews, meeting minutes/opinion records), issues of concern of stakeholders are given 5 points directly.

Degree of impact assesses the potential damages and losses incurred to the Company or stakeholders when various aspects are implemented improperly. Three scenarios are assessed including financial losses to Macronix or stakeholders (3 points), reputation damage to Macronix (2 points), and none/unknown status (1 point).

## **Threshold Values, Degree of Elimination and Coverage**

Regarding the threshold values for the material aspects in this report, a relevant issue is deemed as a material aspect when the total score for degree of concern is 5 or higher, or the total score for degree of impact is 2 or higher. When the rating is higher than the threshold value, but the degree of concern or impact has a point score of 0, then whether the issue is a material aspect will be discussed. For issues that are excluded because of the threshold, we will also discuss whether they are worth reporting. Finally, a final discussion on the selected material aspects is held by the CSR report task force, and the outcome is presented to a management representative for approval.

## Ranking of Relevant Issues



### Material Aspects and Boundary Setting

Category	Aspect	Ranking	Material Aspect	Boundary Setting			Remarks
				Internal	Customers	Suppliers	
Economic	Economic Performance	1	V	V			
	Market Presence	31	V	V			
	Indirect Economic Impacts	25	V	V			
	Procurement Practices	31	V	V		V	
Environmental	Raw Materials						Excluded
	Energy	26	V	V			
	Water Resources						A response must be given to the aspect concerning water shortages in Taiwan in 2015
	Biodiversity						
	Gas Emissions	1	V	V			
	Effluents and Waste	7	V	V			
	Products and Services	17	V	V	V		
	Environmental Law Compliance	10	V	V			
	Transportation	20	V	V			
	Overall Status of the Environment	20	V	V			
	Supplier Environment Assessment						Indicator is established; DMA not disclosed

Category	Aspect	Ranking	Material Aspect	Boundary Setting			Remarks
				Internal	Customers	Suppliers	
	Environmental Grievance Mechanisms	26	V	V			
Labor Practices and Decent Work	Employment	4	V	V			
	Labor/Management	9	V	V			
	Occupational Health and Safety	8	V	V			
	Training and Education	18	V	V			
	Diversity and Equal Opportunity	26	V	V			
	Equal Remuneration for Women and Men						
	Supplier Assessment for Labor Practices						Indicator is established; DMA not disclosed
	Labor Practice Grievance Mechanisms	20	V	V			
Human Rights	Human Rights Investment	20	V	V			
	Non-discrimination	14	V	V			
	Freedom of Association and Collective Bargaining	26	V	V			
	Child Labor	19	V	V			
	Forced or Compulsory Labor	12	V	V			
	Security Practices	26	V	V		V	
	Indigenous Rights	33	V	V			

Category	Aspect	Ranking	Material Aspect	Boundary Setting			Remarks
				Internal	Customers	Suppliers	
	Human Rights Assessment	38					
	Supplier Human Rights Assessment	36					Indicator is established; DMA not disclosed
	Human Rights Grievance Mechanisms	35					
Society	Local Communities	15	V	V			
	Anti-corruption	15	V	V	V	V	
	Public Policy						
	Anti-competitive Behavior	20	V	V			
	Social Legal Compliance	3	V	V			
	Supplier Assessment for Impacts on Society	34					Indicator is established; DMA not disclosed
	Grievance Mechanisms for Impacts on Society	36					
Product responsibility	Customer Health and Safety	10	V	V	V		
	Product and Service Labeling	5	V	V	V		
	Marketing Communications						Excluded
	Customer Privacy Rights	13	V	V	V		
	Product Regulatory Compliance	5	V	V	V		

## 4. Corporate Governance

Macronix govern corporate utilized a high standard and commit to keep a good relationship with investors. We also comply with the principles of corporate governance and establish our Code of Business Conduct and Ethics which is followed by all employees in Macronix.

Macronix's Philosophy

**Be Grounded**

Macronix's Corporate Values

**Innovation, Quality, Efficiency, Service, Team Work**



Macronix was honored by the Taiwan Stock Exchange as a company listed in the top 5% during the first corporate governance evaluation. Miin Wu, Chairman of Macronix received the award on behalf of Macronix.

## 4.1. Corporate Governance

Five elements of Macronix corporate governance:

- ◆ Protect the rights and interests of shareholders
- ◆ Equal treatment to shareholders
- ◆ Strengthen the structure and function of the Board of Directors
- ◆ Increase information transparency and disclosure
- ◆ Implement corporate social responsibility

After becoming the world's first publicly listed Taiwanese high-tech company on the NASDAQ in 1996, Macronix took the initiative to adopt advanced management systems from abroad, established independent director seats and functional committees such as the Audit and Compensation committees to strengthen the operation of the Board of Directors, and took the lead in changing the director election system to be done entirely by "candidate nominations" in 2006. The Company's systems and operations are superior to those required by Taiwanese law in order to enhance its corporate governance. In recognition of our efforts, we were ranked in the top 5% of companies in the 2015 First Corporate Governance Evaluation for Listed and OTC Companies.

### 4.1.1. Governing Unit

#### The Board of Directors

Macronix's board of directors serves as the top governing unit of the Company. Chairman is also the CEO, and the board is comprised of 15 industry professionals and specialized scholars with practical and theoretical backgrounds in business, law, finance, accounting, electrical engineering, physics, and material engineering. There are three independent director seats served by specialists in management, electrical engineering, and accounting/statistics, who oversee the execution of Macronix's operation plans based on their expertise and objectivity to ensure the board is making quality decisions. We have a total of 15 directors, 14 male (93%) and 1 female (7%). All directors are over 50 years of age.

Furthermore, Macronix started to internally handle matters related to company stock in 1997 with a dedicated unit to manage shareholder affairs, address shareholder concerns, and promote a strong relationship with institutional investors. Therefore, we arrange visits to global institutional investors every year and hold an investor conference each quarter to maintain transparent communications with institutional investors worldwide.

#### Macronix Corporate Governance Highlights

Scope	Highlights
The Board of Directors	<ul style="list-style-type: none"><li>◆ Prohibits employment of relatives of directors (third-degree) at Macronix</li><li>◆ Lead Taiwan's industry in purchasing director liability insurance (since 1999)</li><li>◆ Established independent director seats (since 2003)</li><li>◆ Adopted candidate nomination system for electing directors (since 2006)</li><li>◆ Replaced the supervisor system with Audit Committee (since 2009)</li></ul>
Management level	<ul style="list-style-type: none"><li>◆ Established the Compensation Committee to evaluate and approve the remuneration for high-level executives (since 2006)</li><li>◆ Prohibits employment of relatives of high-level executives</li></ul>

Scope	Highlights
	(fourth-degree) <ul style="list-style-type: none"> <li>◆ Set up operation goals and implementation of PDP performance evaluation</li> </ul>
Internal controls	<ul style="list-style-type: none"> <li>◆ Systematize internal controls and self-check operation procedures</li> <li>◆ Implement redundant check systems for audit operations</li> <li>◆ Audit results are reported to the Audit Committee and Board of Directors regularly</li> </ul>

### Compensation Committee

The Compensation Committee was inaugurated on August 8, 2005 and officially established on August 23, 2011 according to regulations. The Macronix compensation committee is composed of three independent directors and one director, Mr. Su Yan-Kuin, serves as the chair. Four meetings were held in 2015. For details on compensation committee meetings, please refer to the Macronix annual report at <http://www.macronix.com>.

### Audit Committee

Macronix employs finance and accounting specialists to serve as Audit Committee members. Six meetings were convened in 2015. The three Audit Committee members are entrusted with auditing annual and semi-annual financial statements, appointments, termination, as well as compensation approval of certified public accountants and reviewing matters where directors may have a conflict of interest. The committee also performs the statutory functions and powers of corporate controllers.

Name	Education	Past Experience
Kao, Chiang	Ph.D., Forest Management, Oregon State University	Chair Professor, National Cheng Kung University
Su, Yan-Kuin	Ph.D., Electrical Engineering,	President, Kun Shan University Honorable Chair Professor, National Cheng

Name	Education	Past Experience
	National Cheng Kung University	Kung University Independent Director, Himax Technologies, Inc
John C. F. Chen	Bachelor of Accounting & Statistics, National Cheng Kung University	Chairman and CEO, Qianqiu Investment Ltd. Corporate representative (director), Changchun Investment Co., Ltd. Corporate representative (director), ReaLy Development & Construction Corp. Chairman, Diwan Capital Ltd.

The general manager, senior managers, financial managers at Macronix shall report any conflict of interest or any concern for potential conflict of interest to the Macronix Audit Committee.

Macronix employees, other than the general manager, senior managers, and financial managers, shall disclose any occurring or potential conflict of interest to their supervisors or senior managers in writing. Macronix directors and corporate controllers shall immediately notify the chairman of the Audit Committee of any conflict of interest.

Please visit the Market Observation Post System of TWSE for information on the resolutions approved by the Company's Board of Directors as well as compensation for employees and directors as resolved during the shareholders' meeting.

#### Remuneration for Key Management Executives

Unit: NT\$1,000

Item	2014	2015
Short-term employee benefits	127,599	127,553
Pension	121,793	17,286
Share-based payment	6,176	32,099
Other long-term employee benefits	134	387
<b>Total</b>	<b>255,702</b>	<b>177,325</b>

Remuneration for key management executives are determined by the Compensation Committee according to individual performances and market trends.

## 4.1.2. Internal Audit

In order to strengthen internal audit mechanisms, Macronix established a dedicated internal audit unit, which is maintained as an independent department with five full-time auditors directly reporting to the board. The auditors are responsible for reporting audit operations to the Audit Committee and will also attend board meetings for reporting.

Internal audit operations are mainly executed according to the audit plan approved by the board and the unit will periodically review the self-assessment operations as part of the internal control systems conducted by various divisions. The internal audit unit will also review the quality of the internal control operations and report the compiled self-assessment results to the board.

## 4.1.3. Management of Code of Conduct and Ethics

The Company has always complied with laws and regulations, and has devised risk management mechanisms. Macronix did not violate any antitrust laws or engage in unfair competition practices; currently, we are not involved in any related litigation.

We have always upheld our business philosophy of "being grounded", and has also formulated and released the Code of Business Conduct and Ethics and Macronix CSR Policy, which serve as behavioral regulations for the Company's directors, various levels of management personnel, and employees. We also anticipate that the directors, supervisors, managers, and employees of our affiliates can also jointly adhere to being "grounded" in running their businesses.

Furthermore, the Company has developed a risk management mechanism. In addition to a top-down, parallel communication channel among all departments, they are also directly affiliated with the Audit Office who reports the internal control management status of the Company to the Board of Directors.

## **Corporate Conduct and Ethics Code**

In accordance with NASDAQ regulations and upon approval by the board, the Code of Business Conduct and Ethics (the "Code") was issued for directors, supervisors, management of all levels, and all employees. The purpose of the code is to prevent any misconduct and encourage the following behavior:

- (1) Honest and ethical conduct (including ethically handling actual or obvious conflicts of interest in personal and professional matters).
- (2) All Macronix public announcements, reports, or documents submitted to securities authorities will be complete, fair, accurate, and timely.
- (3) All conduct will be compliant with government laws, guidelines, and regulations.
- (4) Timely reports of any violations of the code by persons subject to the terms of the code.
- (5) All conduct shall comply with the code.

To ensure that all Macronix employees are fully aware of this Code, one hundred percent (100%) of all new employees must receive training and are tested during their orientation. In addition, compliance with the Code by employees is included as part of the annual performance evaluations, so that Macronix employees are reminded on a daily basis of the importance of carrying out this Code.

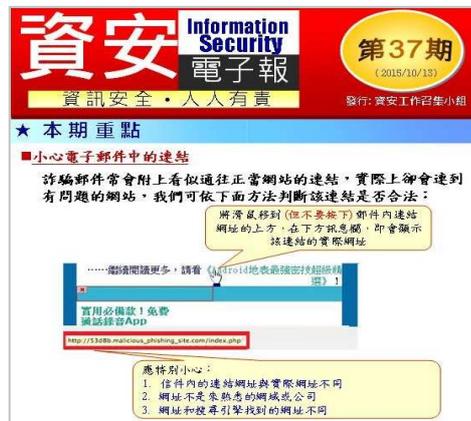
Based on this Code, Macronix's anti-corruption policies state that "company personnel must not use Company property, information, or position to obtain opportunities for personal gain; they must not use Company property, information, or position for personal benefits or compete with the Company. Company personnel have the responsibility to the Company to advance its legitimate interests when business opportunities arise." We have also developed ethical and social responsibility risk assessments for each department in 2015, the scope of which covers all departments of the Company. To date, there are no reported cases of corruption.

#### 4.1.4. Confidential Information Protection

In recent years, Macronix has been emphasizing the importance of information security in protecting its intellectual property and customer confidentiality: Based on the idea of our general manager to "prevent information security incidents from happening before they occur", we established an Information Security Committee led by the Company's vice president and comprised of top supervisors from different divisions and business units to oversee matters related to information security. In addition, Macronix also holds education and training sessions, as well as promotional campaigns to raise awareness on information security. For example, Macronix offers training programs for new recruits, holds information security challenges, issues monthly information security e-newsletters, and establishes information security websites. With the goal of encouraging everyone to be responsible for information security, Macronix has internalized our practices into an action plan aimed at protecting the Company's intellectual property and confidential information.



Information security website



Information security e-newsletters

#### 4.1.5. Compliance with Regulatory Requirements

Macronix has always complied with laws and regulations, and has not violated any laws and regulations nor being punished for any violations. We also did not violate laws pertaining to product and service information labeling, nor receive punishment for violations pertaining to product and service regulations.

Macronix has also setup the Legal Office that offers consultation services, supervises and implements legal compliance, and integrates the philosophy of "being grounded" in its business management by obeying rules and applying knowledge into practice.

Macronix is once again emphasizing the importance of self-discipline and the top-down compliance with laws and regulations (including the Securities and Exchange Act, Company Act, Labor Standard Act, Insider Trading Act, Anti-Corruption Act, Securities laws and orders, Fair Trade Act, Money Laundering Control Act, Act of Equal Remuneration for Women and Men in Employment, Personal Information Protection Act, regulations for import/export management, and environmental protection). Macronix also promotes relevant regulations and policies frequently.

Macronix offers different channels to encourage learning and continuing education. For example:

- ◆ Macronix Academy: Provides a comfortable reading environment where employees can borrow law books.
- ◆ Macronix Quarterly: Periodically publishes legal encyclopedia, using easy-to-understand methods to offer new legal or regulatory knowledge that enriches employees' legal knowledge and prevent them from violating the law.
- ◆ Macronix e-Academy: Offers online courses (including topics such as the Personal Information Protection Act or sexual harassment prevention) so that employees can arrange their schedule without being subjected to space and time restrictions.
- ◆ External training courses: Encourage employees to leverage resources and engage in learning. For example, employees can use the libraries at National Tsing Hua University and National Chiao Tung University for free, or they can be informed of governmental or private courses through Macronix e-Academy's announcements for external courses.

## 4.2. Risk Management

In order to protect the Company's assets, assure employee health, and care for the rights and interests of stakeholders, we manage our risks by following the Risk Management Policy and CSR Policy, and enrolled in relevant insurance policies to avert risks. To ensure the quality of the Company's internal control systems, our internal audit unit makes scheduled and unscheduled checks on the implementation status; results are reported to the Board of Directors by the Audit Committee.

Macronix has setup an OSHEC, with the Safety and Health Center being responsible for integrating and coordinating risk/environmental safety and health activities. In 2015, we conducted a simulation of our Business Continuity Plan (BCP) involving ten major crisis (natural disaster, fire disaster, water shortage, power outage, and raw material shortage), and performed risk assessment of suppliers (RAS) to ensure that the entire supply chain, from upstream to downstream, can all implement the BCP. Through simulation and supplier assessment, we are able to face material incidents that are likely to occur and fully prepare ourselves for these events. We can also request suppliers to device response plans and procedures for potential operation risks so as to ensure continuous operation and lower the impact of such incidents on Macronix.

In 2015, we have also devoted our efforts in making improvement plans for mitigating the effects of 15 risk items (fire prevention, explosion prevention, fire protection, shockproof for machinery equipment, and other protective engineering tasks) so that potential impact caused by disrupting business operations can be minimized. Macronix has developed a Global Disaster Warning and Damage/Loss Reporting System. When a material incident occurs in Taiwan (natural disaster, fire disaster, water shortage, power outage, and raw material shortage), we can notify our internal production line and external supply chains in a timely manner, request them to report back on the effects of the incident on the supply of raw materials and process technologies. If supplies are disrupted, the restoration process must be updated continuously in order to maximize the performance of our risk management system.

We take pride in abiding by related laws and regulations to implement risk management mechanisms. We have not experienced a disruption in our supply chain, are not violated in any corporate social accountability regulation, and have not been fined for any major violations.

## 4.3. Innovation

### 4.3.1. Importance of Innovation

Macronix is committed to the development of non-volatile memory devices. Not only do we have our own brand, but we also further advance the development of our own technologies. Macronix leads the world in developing ROM products and technologies with storage capacity ranging from 16 MB to 32 GB. The product line is comprehensive and able to provide protection for confidential data. With our abundant manufacturing experience and complete management systems, Macronix is able to achieve world-class performance in product delivery and shipment volume.

With regards to flash memory, Macronix currently specializes mainly in NOR Flash, excelling in both technology and product quality. Our products come in a wide range of storage capacities and specifications including 3V or 1.8V operating voltages, serial or parallel interfaces, mainstream or niche specifications, which are used extensively in the global market.

Macronix's self-developed NAND Flash features stable quality and is currently being mass produced, making Macronix one of the few suppliers in the world that possesses both NOR Flash and NAND Flash at the same time. In the future, we can cultivate this market by offering more professional and flexible products and services to advance onto a whole new level of competitiveness.

#### **Successful Technologies or Products**

In 2015, Macronix continues to innovate products and technologies in an effort to extend their exceptional product competitiveness.

- (1) Technology innovation
  - ◆ Innovation and verification of 3D NAND technology.
- (2) Product innovation
  - ◆ Suitable for future IoT applications; innovation and mass production of a new-generation, ultra-low power NOR Flash.
  - ◆ Suitable for electronic automobile applications; innovation and mass

production of new-generation, ultra-fast NOR Flash.

### **New Products to be Developed**

(1) Non-volatile memory products

We utilized the new equipment of our 12-inch fab plant and created an advanced R&D environment, where the following three new-generations of core technologies are continuously being developed. In the future, we will use this foundation to develop innovative memory products and solutions.

- ◆ XtraROM®: 32-nm plan.
- ◆ NOR Flash: 48-nm plan.
- ◆ NAND Flash: 19-nm plan.

(2) Wafer Foundry Service

- ◆ Flat cell, OTP, and embedded non-volatile memory which are used in micro-controllers and voice ICs.
- ◆ High-voltage CMOS process technology that is applied in LCD/LED drivers and power management ICs.
- ◆ Ultra-high voltage process technology that is used for lighting.
- ◆ Focusing on developing CD (CMOS-DMOS) and BCD (Bipolar-CMOS-DMOS).
- ◆ Customized process technologies.

## 4.3.2. Intellectual Property Management

### Our Commitment to Patent Protection

Macronix has long devoted its efforts in the innovation, research and development (R&D) of non-volatile memory technologies and products, attaching a high level of importance to protecting its intellectual property (IP) rights. The Company has filed patent applications in various countries to secure its key technologies and abundant R&D achievements.

Outstanding patents	
◆	544 patents obtained in 2015
◆	6,260 patents were obtained throughout the world as of the end of 2015
Affirmation of patent ranking	
◆	According to Taiwan's corporate patent certifications, since 2000, Macronix has been ranked in the top 100; ranking 14th in 2015.*
◆	According to the Patent Board of the United States, Macronix continued to be ranked in the top 300 from 2001 to 2014.**

\*Information source: Intellectual Property Office, Ministry of Economic Affairs.

\*\*Information source: ipo.org; 2015 rankings were still not released as of the end of April, 2016.

## 4.4. Supply Chain Management

Macronix, as a leading semiconductor provider in the world, works with a variety of supply chain partners in the industry, including manufacturers, agents, and contractors of raw materials, parts, mask, equipments, plant facilities, information and automated products, and semiconductor assembly and testing. To generate mutually beneficial outcomes, we select suppliers by placing equal importance on local suppliers and global supply chain partners so as to ensure our service quality, strengthen supplier cooperation, shorten the process of product development, enhance supply chain flexibility, as well as

reduce unnecessary costs and carbon emissions during transportation. As of 2015, procurement of raw materials in Taiwan accounted for 30% of our overall purchasing (2014: 30%; 2013: 25%).

To manage the quality of raw material suppliers, Macronix plans to provide control and guidance in the following three dimensions:

(1) Supplier management system certifications: We require our suppliers to obtain international certifications such as ISO 9001, ISO 14001, and OHSAS 18001 with respect to their quality, environmental, safety, and health management systems to ensure that they protect the environment and improve their safety and health practices.

(2) Supplier audit and counseling: We formulate annual audit plans every year to conduct on-site audits. For any deficiencies discovered, we request our suppliers to submit improvement plans, wherein goals and deadlines are explicitly specified to meet our expectations.

(3) Supplier management and supplier rating: We conduct performance evaluations on three dimensions: quality, costs, and delivery. In 2015, 95.6% of the suppliers were rated 80 points or higher. For suppliers with a score of less than 80 points, the Raw Material Management Committee will carry out project improvements, counseling, auditing, as well as other measures.

In implementing CSR, we also take into account the participation of the overall supply chain, hoping to help our suppliers establish and raise their awareness and capabilities in social and environmental responsibility (SER) by enhancing SER controls and training for our supply chain partners as well as performing audits.

We hold true to the principles of creating value together with our partners and adhering to high standards of business ethics to protect employee and partner rights and dignity. We set up strict and vigorous health and safety standards to minimize any negative influences on the environment, safety, health, and our partners. In order to fulfill these promises, we work closely with employees, suppliers, and suppliers' employees to ensure that all CSR values are put into practice throughout the entire organization, thereby making CSR a part of Macronix's corporate value.

#### 4.4.1. Sharing Beneficial Outcomes with Customers

Macronix is committed to being an integrated solutions provider; this is a long-term promise we have made to our corporate partners, and it is also our ultimate goal. Production of low-cost and standardized memory and logic chips in large quantities is no longer the mainstream in the era of information appliances. The market's focus is shifting to information-oriented devices, therefore whomever is capable of delivering custom-made total solutions for various electronic product applications will be able to ride the next high-tech wave and emerge as the leader.

After more than two decades of cultivation, Macronix has successfully built strategic partnerships with world-class manufacturers in the U.S., Japan, Europe, and Asia. Our favorable long-term relationships with these powerful partners have enabled us to develop top quality flash memory products, ROM, and logic devices. In addition to our efforts to try to expand our worldwide market share, we also endeavor to become the world's top Mask ROM provider.

During the implementation of our corporate concepts, Macronix has advanced from the first stage, in which we became an integrated service provider that offers complete services from R&D, design, manufacture, and production to assembly and testing, to the second stage in an effort to become an innovative solution partner for customers. We actively participated in the development projects of our system customers, providing not only innovative R&D concepts and advanced processing technologies, but also supplying creative ideas to help our customers develop marketable products.

Macronix not only leverages its world-class R&D and manufacturing capabilities to offer customers high-quality, innovative, and performance-driven products, but also strives to protect customer information. Macronix has formulated Guidelines for Macronix Information Management which specify procedures and regulations for managing confidential data. We educate and train our employees regularly on the protection of confidential data and require all employees to pass the test on information security each year. All customer-related documents, data, and business-related information are strictly controlled by internal systems. Macronix did not receive any complaints regarding infringement of customer privacy in 2015.

In the future, Macronix will continue to accumulate its intellectual properties, provide better products and services, and cooperate with its customers to face challenges pertaining to advanced technologies and collectively share positive outcomes with them.

Devotion to service is one of the business concepts that Macronix operates under, and maintaining favorable customer relationship is a Macronix core value. Macronix takes customer satisfaction surveys very seriously, with its headquarters directly overseeing the execution of periodic customer surveys so that high-level executives can truly understand customers' degree of satisfaction. We instituted satisfaction evaluation mechanisms for sales services, order shipments, product quality, customer services, and environmental awareness, while also conducted surveys through questionnaires and telephone interviews. Survey results serve as an important basis for Macronix to review our service quality and improve our operation flow, which will then enable us to optimize our services and thereby enhance the relationships with our customers. The latest customer satisfaction survey was completed in 2014, and all customers gave positive ratings for the Company. Next survey will be conducted in 2016.

#### 4.4.2. Growing Together with Our Suppliers

Macronix uses CSR as a criterion for evaluating and selecting suppliers. We have deeply rooted CSR programs in our supply chain and have invited our supply chain partners to sign the "Supplier Corporate Social Responsibility and Business Ethics Consent" to jointly promote our CSR work and grow together with our partners.

Macronix was one of the first firms in the Hsinchu Science Park to complete greenhouse gases verification and among the first semiconductor providers to receive AEO certification from the Customs Administration, Ministry of Finance. We also actively pushed upstream and downstream supply chain partners to comply with the EICC® Code of Conduct, and instituted "Supplier Green Product and SER Audit" mechanisms. By conducting annual audits on our supply chain partners, we expanded our CSR to the supply chain system level. At Macronix, we protect the planet through actions.

We also extended the requirements of SA8000 standards (e.g. no child labor, the granting of freedom of assembly and association, and no forced labor) to our supplier selection policies (including security guards and janitors) and incorporated these principles in our employee training courses and promotional materials. In 2015, 23 suppliers passed our RAS. We offered assistance to the suppliers who failed the audits so that eventually, 100% of our suppliers were compliant with our requirements.



Propagating Macronix's CSR policy and supplier agenda during the 2015 suppliers meeting

## 5. Economic Dimension

### 5.1. Financial Performance

Macronix established its headquarters in the Hsinchu Science Park on December 9, 1989, and it commenced its operations in December of that year. The main business activities of Macronix include design, manufacturing, and marketing of integrated circuits and memory wafers, commissioned design of related products, development, consultation, as well as engage in business-related import/export trading.

The Company was listed on the Taiwan Stock Exchange on March 15, 1995. We have issued our stocks in the form of U.S. depository since May of 1996 on the Nasdaq Stock Market; however, Macronix was delisted from Nasdaq on October 29, 2007.

For details on our subsidiaries, shareholding ratio, and business items, please refer to Appendix 4 or subsidiaries that were included in the 2015 Q4 consolidated financial report. As of December 31, 2015, subsidiaries that are directly or indirectly owned by the Company include Run Hong Investment, Ltd. ("Run Hong"), Hui Ying Investment, Ltd. ("Hui Ying"), Mxtran Inc. ("Mxtran"), Infomax Communication Co., Ltd. ("INFOMAX"), Macronix America Inc. ("MXA"), Macronix (BVI) Co., Ltd. ("MXBVI"), Mxtran Holding (Samoa) Co., Ltd. ("Mxtran Samoa"), Mxtran (H.K.) Holding Co., Limited ("Mxtran HK"), Mxtran Technology Co., Ltd. ("Mxtran Beijing"), Infomax Holding Co., Ltd. ("InfoMax Samoa"), Infomax Holding Company Limited ("InfoMax HK"), Infomax Communication (Suzhou) Co., Ltd. ("Infomax SU"), New Trend Technology Inc. ("NTTI"), Macronix (Asia) Limited ("MX Asia"), Macronix Pte. Ltd. ("MPL"), Macronix Europe NV. ("MXE"), Macronix (Hong Kong) Co., Ltd. ("MXHK"), and Macronix Microelectronics (Suzhou) Co., Ltd. ("MXm"). The subsidiaries listed in the preceding paragraph are excluded from the scope of this report.

**2013–2015 Business Performance**

Unit: NT\$1 million

Item	2013	2014 (revised)	2015
Net operating revenue	22,204	22,414	20,928
Operating cost	20,253	19,520	18,416
Gross profit	1,951	2,894	2,512
Operating expenses	8,307	9,210	7,516
Loss from operating	(6,356)	(6,316)	(5,004)
Non-operating income and expenses	3	(146)	823
Loss before income tax	(6,353)	(6,462)	(4,181)
Income tax expense	5	13	15
Net loss for the year	(6,358)	(6,475)	(4,196)

**Innovation and R&D Investments**

Unit: NT\$1 million

Item	2013	2014	2015
Fixed R&D investment	5,453	6,435	4,966
Total revenue	22,204	22,414	20,928
Percentage	24.56%	28.71%	23.73%

**Financial Assistance Received from Government**

There were no government subsidies and items in 2015.

## 5.2. Indirect Impact on the Economy

### Development and Impact of Infrastructure Investments and Services Supported

In 2015, no major investments were made on infrastructure. The capitals for this year were mainly spent on procuring and establishing R&D-related facilities.

Please refer to Chapter 7.4 of this report for a list of donations and charity events.

### Human Rights Investment

In 2015, there were no significant investment agreements and contracts that included human rights clauses or underwent human rights screening. Please refer to Chapter 4.4 of this report for human rights assessment on suppliers.

### Significant Indirect Economic Impacts

Material aspects of real estate, plants, and equipment are independently depreciated according to a linear basis within their expected service lives. Consolidated companies must examine the estimated remaining service life, residual value, and method of depreciation at least once per year at the end of the financial reporting period, and infer the effects of these changes into accounting estimates.

According to the evaluation reports published by China Credit Information Service, Ltd., the actual service life of the Company's existing target equipment has exceeded the original service life established. After considering physical, functional, and economic wear and tear, management executives have decided to change the service life of machinery and R&D facilities from 6 to 11 years as of January 1, 2016; plant facilities from 6 to 15 years; and main plant buildings from 21 to 31 years.

Assuming that assets will be held until the end of their service lives, then the following reassessment shows that consolidated depreciation costs for the next 3 years will be reduced by (unit: NT\$1 million):

Year	2016	2017	2018
Amount	3,775	2,558	241

## 6. Sustainable Environmental Dimension

### Macronix ESH Policy

- ◆ **Rights and Obligations:** We promise as well as ensure that all Macronix employees work in a comfortable, safe, and healthy environment. We guarantee employees and their representatives will receive adequate consultation and have opportunities to participate in safety and health management activities. All Macronix employees can fulfill their duties and obligations to build a safer and healthier environment.
- ◆ **Regulatory Compliance:** We abide by environmental, safety, and health regulations, as well as implement environmental, safety, and health campaigns.
- ◆ **Risk Prevention:** We conduct danger assessments, risk evaluations, and environmental impact analysis to determine potential risks and facilitate pollution control and disaster prevention.
- ◆ **Education and Training:** We provide high-quality and comprehensive educational training so that our employees are able to carry out environmental, safety, and health procedures properly.
- ◆ **Sustainable Development:** We adhere to the international trend of developing green products and carrying out the strict management of environmental-related controlled substances. Based on international occupational safety and health management measures and environmental control systems, we continue making improvements and effectively use all resources to safeguard the environment, as well as ensure the safety, and health of our employees while also sustaining growth for the company that is in line with the expectations of all Macronix employees, customers, shareholders, and stakeholders.

## 6.1. Pollution Prevention

Macronix has always embraced the principle of sustainable management. Macronix sees sustainable environment as the foundation of our corporate culture, and we seek to protect the planet through concrete actions: Each year, we continue to reduce our energy consumption and carbon emissions, purchase "Green Mark" products, increase resource efficiency, and design green products. We actively promote energy and water conservation, waste reduction, process improvement, pollution control, green offices, resource recycling and reuse, ecological conservation, and educational training. We adopt a proactive attitude toward compliance with laws and international standards to set up pollution prevention facilities (e.g., wastewater treatment facility, scrubber, waste storage area, toxic gas detector, and soundproof walls) for preventing various types of pollution including wastewater, air pollution, waste material, toxic substances, and noise. Nevertheless, we go to great lengths each year to minimize the impact of our operations to the environment and enhance our corporate competitiveness by raising our quality control criteria. In 2015, the Company did not receive any judicial or administrative punishment for violating environmental laws or regulations.

Major awards received by Macronix during 2015 in recognition of our achievements in the environmental category:

- ◆ Outstanding water-saving performer
- ◆ Science Park Green and Beautiful Environment Maintenance-Outstanding Award
- ◆ Hsinchu City private manufacturer and group that performed exceptionally in green procurement



We introduced and passed ISO 14001 Environmental Management System Certification in 1997. We ensure our environmental management systems fully comply with the Plan-Do-Check-Act (PDCA) operations of the ISO system to maintain a healthy and safe environment, and continued to make improvements to reach our goal. 100% of Macronix's facilities have passed the Environmental Management System Certification.

To ensure a smooth communication channel that communicates environmental or other issues to Macronix stakeholders as well as its internal employees, we have set up contact windows for the government, general public, customers, investors, employees, media, and suppliers to handle and respond to precious opinions that are provided externally or internally. In 2015, Macronix did not receive any environment-related complaints according to case statistics related to environmental complaints.

### 6.1.1. Water Resource Management

As the fabrication of semiconductors require a large amount of ultrapure water, Macronix's total running water usage in 2015 amounted to 2,573,684 tons (based on water meter data), and the total volume of water discharged was 1,840,253 tons (the aforementioned data comprises the usage by the headquarters and offices of subsidiaries that are set up in the plant area). Recycling of discharged water has always been an issue of concern for Macronix. In addition to submitting water balance charts to the Science Park, our internal units also monitor process water recycling rate on a daily basis. Through reduction of process water volume and waste water recycling technology, Fab 1, Fab 2, and Fab 5 were able to recycle 354,993 tons, 1,370,793 tons, and 1,694,260 tons of waste water in 2015, respectively. The recycle rates were 80.45%, 87.02%, and 83%, respectively (recycling calculation based on the water recycling rate of the Science Park's water balance chart and excludes calculations for rainwater recycling). Our wastewater is treated in a wastewater treatment facility before being discharged into the underground sewer. Other water resource management measures include:

- ◆ Regularly track and manage the usage data of water resources Conduct risk evaluation and control
- ◆ Conduct risk assessment and management
- ◆ Determine if our fabrication facility is located in an area with water shortages
- ◆ Help promote water resource utilization programs

- ◆ Entrust certified organizations to sample and analyze the quality of discharged water twice a year
- ◆ Real time monitor pH/fluoride levels of effluent and pH level of rain water, with all results being compliant with regulations.
- ◆ Environmental inspectors routinely examine the conditions of wastewater treatment and report the results in a timely manner

With effective control measures, Macronix not only met all regulatory standards (please refer to the table below for the quality of discharged water from Macronix's plants in 2015), our average water recycling rate has also reached 83.49%. In 2015, we have also received the "Outstanding Water-Saving Performer" from the Hsinchu Science and Industrial Park, Ministry of Science and Technology.

#### Quality of Discharged Water in 2015

Site	pH	BOD (mg/L)	COD (mg/L)	SS (mg/L)
FAB1	6.6	9.45	50	13.75
FAB2	7.35	54.4	83.7	105.5
FAB5	7	51.55	90.9	93.9
BE	8.6	97.4	195	84

Source: Macronix's annual report on wastewater discharge

### 6.1.2. Air Pollution Prevention

All waste gases generated from manufacturing processes at Macronix are collected and classified via the gas collector and subsequently treated before being discharged again; this process conforms to the government's regulations for environmental protection. The central gas emission treatment system at Macronix is composed of three main systems for general emissions, acid/alkaline gas emissions, and volatile organic compounds (VOCs). Waste gases are treated in professionally designed facilities and emissions are released in accordance with statutory regulations. We entrust certified organizations to test acid gas emissions every year. Macronix facilities are installed with continuous monitoring device for measuring VOCs, and the emission removal rate is as high as 90% and the emissions are less than 0.6 kg/hour from each fab.

## 2015 Waste Gases Emission Data

Site	VOCs	Nitrogen oxide (NOx)	Sulfur oxide (SOx)
FAB1	1283.15	1291.83	454.53
FAB2	3653.29	3123.77	77.19
FAB5	2806.64	2062.4	56.42

Unit: kg/year

Source: Costs of preventing fixed sources of air pollution

Macronix manages the emission of waste gases generated from various modes of transportation, namely shuttle buses for employees, corporate vehicles, and wafer transport vehicles:

- ◆ Employee shuttle bus to/from work: Vehicle sources include car rentals, which are managed by requesting the party to sign an agreement form for the self-management of diesel cars (including maintenance plans, type of petrol used, and emission tests, etc.), and all signed documents are preserved
- ◆ Corporate vehicle/wafer transport vehicle: Corporate vehicles are serviced every 5,000 km, and emission testing is conducted as required by law. The car rental company is responsible for other items related to rental car maintenance and emissions testing.

Our plants are located inside the Hsinchu Science and Industrial Park, and we are fully willing to cooperate with matters required by the science park. Communities surrounding Macronix Headquarters and the Fab 5 plant often report of strange smells. Technically speaking, waste gases emitted from the Company's various fabrication plants should not produce abnormal smells because they are treated before released; however, communities situated around Fab 2 and Fab 5 plants are concerned about the abnormal odor. Therefore, these plants continue to cooperate with the Park's requirements to report on complaints that are filed every month. The Company's headquarters did not receive any complaints regarding abnormal smells in 2015.

### 6.1.3. Waste Management

Macronix has completed the adoption of alternative materials and improvement in fabrication processes regarding hazardous substances used in electronics that are of concern to the international community and specified in the EU RoHS (Restriction of Hazardous Substances). We received IECQ QC 080000 Hazardous Substances Process Management System Certification in November 2007, which confirmed that our products are compliant with RoHS and customer requirements. Because of our thorough hazardous substance management system, we have been awarded green product certifications from many internationally known customers.

Our main consideration with respect to waste management strategies is to recycle and reuse. Our waste production is categorized into general waste and hazardous waste, and these wastes are consigned to eligible vendors for subsequent waste treatment. Before waste disposal, we first confirm how the commissioned contractors process the waste and require them to undergo relevant review procedures before commissioning them to treat the waste. Total waste generated at Macronix in 2015 was 6,295 metric tons, of which approximately 75.89% was recycled and reused; this treatment approach yielded the highest ratio compared with other methods (refer to the following table on waste output). Furthermore, there were no incidents of severe leakage in 2015.

#### Waste Produced by Macronix

Waste Category	Categorized by Treatment Method	Volume produced in 2015
General industrial waste	Recycling/reuse	1,344,652
	Composting of waste	271,350
	Incineration	259,580
	Landfill	196,390
	Treated elsewhere	0
	Other	115,044
Hazardous industrial waste	Recycling/reuse	3,432,394
	Composting of waste	0
	Incineration	21,268

Waste Category	Categorized by Treatment Method	Volume produced in 2015
	Landfill	0
	Treated elsewhere	0
	Other	654,253
Total Amount of Waste		6,294,931
Total waste recycled/reused		75.89%

\*Unit: kg

\*\*Other types of waste include wastes that are recycled/reused, decomposed, incinerated, buried, and processed elsewhere

\*\*\* General industrial waste output includes the output of domestic wastes generated by the office buildings of Macronix subsidiaries

## 6.2. Energy and Greenhouse Gases Management

### 6.2.1. Energy Management

Macronix is dedicated to reducing energy use and consumption every year. We follow the instructions provided by the Bureau of Energy, Ministry of Economic Affairs each year to report our energy conservation audit system for energy users and to report our energy use from the previous year. Furthermore, we officially formed the Macronix "Energy Conservation Service Group" in 2008 to carry out various energy conservation activities. Over the years, work activities in this domain include:

- ◆ Implemented energy management initiatives for all levels of our operations.
- ◆ Energy Conservation Service Group helped implement energy conservation techniques and experience sharing.
- ◆ Introduced external energy audits and invited experts to provide guidance
  - Completed on-site energy audits by the ITRI energy conservation service group, including audits on our air conditioning systems, power systems, air compression and energy management systems.
  - Promoted energy conservation guidance program for firms in the Science Park.

- Five experts including specialists from the ITRI Green Energy and Environment Research Laboratories, professors from National Taipei University of Technology, and energy conservation and carbon reduction consultants from the Industrial Development Bureau conducted on-site evaluations of our cleanroom air conditioning system, chiller system, and air compressor system and offered advice on VOC to RTO energy-savings technology.
- Executed SEMI S23 pilot project in 2013 and completed establishing the Fab 5 plant air-conditioning system energy baseline.
- Extended the SEMI S23 pilot project and established energy baseline for the entire system as well as a portion of energy-consuming processing equipment used in Fab 5 to improve main energy-consuming equipment and enhance the company's competitiveness in energy utilization.
- ◆ Hold regularly internal energy control meetings to implement projects and track progress
- ◆ Routinely maintain records of various energy supplies and check energy equipment at our facilities
- ◆ Perform unscheduled audits on MODULE energy consumption and energy equipment checks
- ◆ Promote education on energy-conservation and carbon reduction through diversified policies and methods
  - Conduct new employee training on energy conservation
  - Provide contractor training at Macronix facilities on energy-saving measures
  - Offer training and education to current employees
  - NOTES Bulletin
- ◆ Improved factory and office equipment, adopted green procurement strategies, introduced and installed new management tools
- ◆ Constantly promoted the importance of energy conservation and carbon reduction to employees through training, post education, and electronic bulletin announcements. Our measures include:
  - Transitioned from T8 lamps to T5 lamps
  - Adopt water-saving measures in restrooms
  - Turn off office lights for one hour during lunch break
  - Use lighting control at parking lots for cars and motorcycles
  - Switch off computers after work
  - Reduce air conditioning usage in offices

- Post signs in meeting rooms to remind employees about energy saving
- Display posters with energy-saving messages
- Announcements are regularly published on the company Intranet to advocate for compliance with energy-saving measures

### Macronix Internal Energy Consumption in 2015 (Including Subsidiaries)

Item	Amount consumed in 2015
Diesel	1.49E+14
Natural gas	7.83E+16
Electricity	1.77E+15
Liquefied petroleum gas (LPG) used in kitchens and dormitories	3.68E+11
Amount of petroleum used	3.87E+14

Unit: Joules

Note: Data obtained from GHG inventory reporting data

Macronix implemented several energy-saving projects over the past few years, including projects focusing on the chiller system, power system, and illumination equipment, achieving significant results. Our energy conservation strategy in 2015 chiefly focused on replacing lighting fixtures and improving various systems in our plants. Major energy conservation achievements for Macronix in 2015 include:

Plant Type	Energy Conservation Plan Implementation period	Energy Conservation Measures	Energy saving Category	Energy conserved Volume consumed (kWh)	Energy conserved Volume consumed (Joules)	Calculation method
FAB1	2015-2016	Upgrading T8 lighting to LED lights	Electricity	1.03E+05	3.72E+11	A
FAB1	2015-2016	Replaced OAC-11A with low-voltage HEPA	Electricity	1.15E+05	4.15E+11	A

Plant Type	Energy Conservation Plan Implementation period	Energy Conservation Measures	Energy saving Category	Energy conserved Volume consumed (kWh)	Energy conserved Volume consumed (Joules)	Calculation method
FAB2	2015-2016	Replaced lighting with LED lights	Electricity	2.44E+05	8.77E+11	B
FAB2	2015-2016	Examined energy saving features of the gas emission system and equipment	Electricity	4.80E+05	1.73E+12	B
FAB5	2015	Conserved energy use for process gas emission systems (pipelines that are 6 inches or longer)	Electricity	1.43E+06	5.15E+12	A
FAB5	2015	Reduced operation of 5A UPW systems	Electricity	9.70E+05	3.49E+12	B
HQ	2015	Delayed the opening time of our fitness center by four hours on weekends and holidays	Electricity	6.98E+04	2.51E+11	A
HQ	2015	Reduced the operating duration of office air conditioners on weekends and during business/none-business hours	Electricity	1.06E+05	3.82E+11	A

\*The amount of energy conserved is compared against the amount of energy consumed before improvements were made

\*The amount of energy conserved is calculated as follows: A=Estimated according to the amount of energy conserved; B=Calculated according to the actual amount of power consumed



Replace lighting fixtures



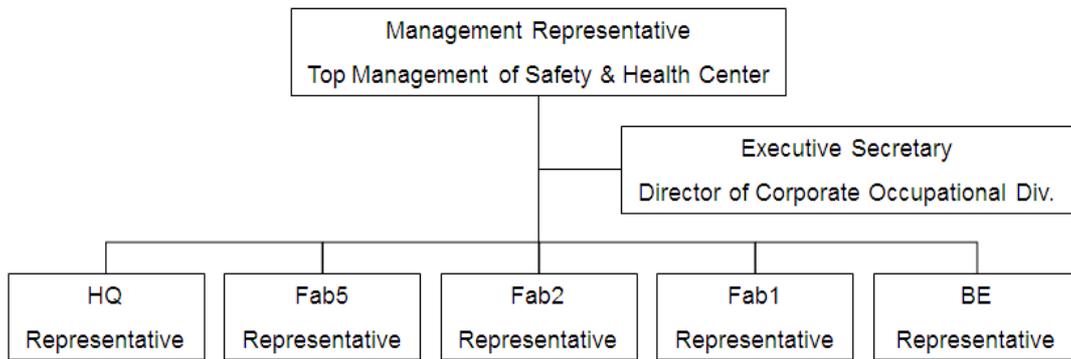
Delayed the opening time of the fitness center on weekends and holidays

## 6.2.2. Low-Carbon Management

In response to the trend of greenhouse gases control and reduction in the supply chain due to global warming, Macronix began planning for greenhouse gases inventory, management, and reduction in 2000 and obtained the 2005 ISO14064-1 greenhouse gases inventory verification statement in 2007.

<b>Macronix Strategies for Greenhouse Gases Control</b>	
◆	Minimize energy loss and reduce greenhouse gases emissions
◆	Raise energy efficiency of equipment
◆	Alternative production process plans
◆	End-of-pipe treatment
◆	Promotion and education
◆	Recycling waste and limiting greenhouse gases emissions

We established the units to manage greenhouse gases management according to ISO 14064-1 verification standards as illustrated below. Through the complete management system, we performed thorough inventory on the energy use conditions in our facilities and offices and thereby established inventory list and internal procedure regard to control of greenhouse gases. Therefore, we are able to use the information as a basis for selecting alternative production technologies with reduced energy consumption and greenhouse gases emissions in order to achieve our goal in this respect.



**Macronix greenhouse gases management organization chart**

Macronix added the scope of Fab 5 in the greenhouse gases check in 2012. However, due to the base year set-up, Fab 5 emissions were not included in the total emission count and were listed separately. Macronix's total emissions in 2015, excluding Fab 5, were 238,785.724 metric tons CO<sub>2</sub>-e. Fab 5 emissions in 2015 were 180,175.541 metric tons CO<sub>2</sub>-e. In addition, excluding Fab 5, Macronix's scope 1 emission accounted for 38.2% and scope 2 accounted for 61.8% of the total emissions. Fab 5's scope 1 emissions accounted for 39.7% and scope 2 emission accounted for 60.3% of the total emissions.

**Macronix Greenhouse Gases Emissions (excl. Fab 5)**

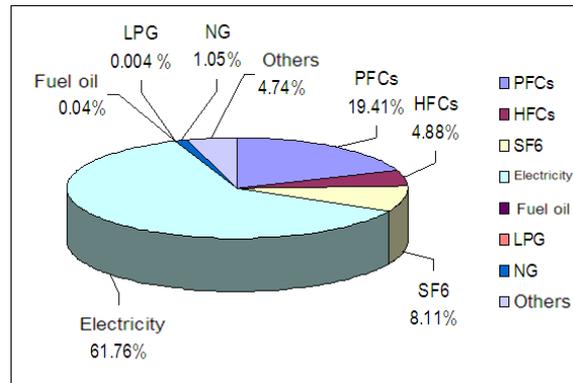
Scope	Unit	2013		2014		2015	
Scope 1 Direct	metric tons CO <sub>2</sub> -e/year	119,000	43.34%	116,000	43.34%	91,000	38.24%
Scope 2 Indirect	metric tons CO <sub>2</sub> -e/year	156,000	56.66%	153,000	56.66%	147,000	61.76%
Total	metric tons CO <sub>2</sub> -e/year	276,000	100%	269,000	100%	239,000	100%

### Fab 5 Greenhouse Gases Emissions

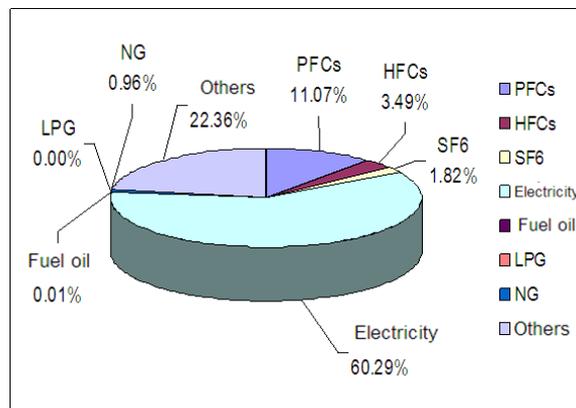
Scope	Unit	2013		2014		2015	
Scope 1	metric tons						
Direct	CO <sub>2</sub> -e/year	80,000	42.86%	65,000	37.80%	71,000	39.71%
Scope 2	metric tons						
Indirect	CO <sub>2</sub> -e/year	107,000	57.14%	108,000	62.20%	109,000	60.29%
Total	metric tons						
	CO <sub>2</sub> -e/year	187,000	100%	173,000	100%	180,000	100%

Note: Scope 3 emissions, other indirect greenhouse gases emissions such as employee business travel and raw material transportation; because they account for such a small portion or cannot be quantified; therefore they were not included.

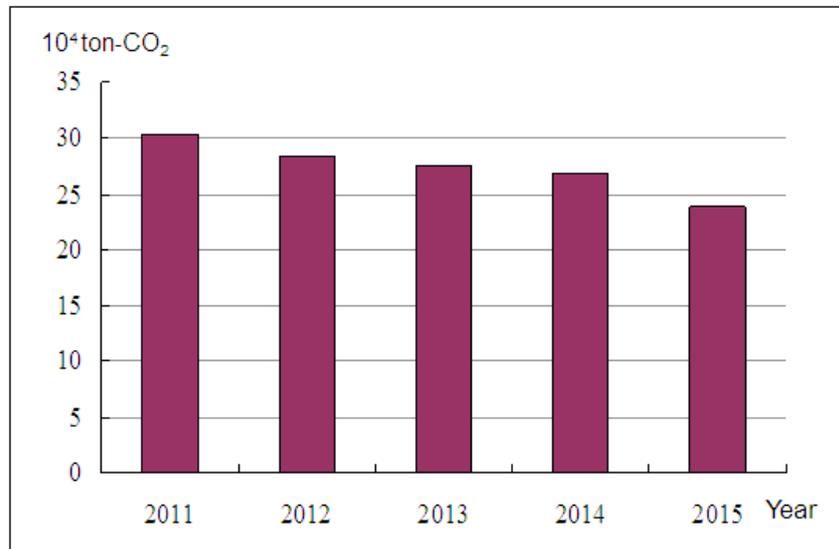
### Ratios of Greenhouse Gases Emissions by Source of Emission, 2015



### Fab 5 - Ratios of Greenhouse Gases Emissions by Source of Emission, 2015



### Trend Diagram of Greenhouse Gases Emissions



Note: This table does not include Feb 5 data

### Carbon Emission Intensity

Item	Calculation unit	2013	2014	2015
Carbon emission intensity	CO <sub>2</sub> -e (tons)/revenue (per NT\$1 million)	12.4	12.0	11.4
Carbon emissions	CO <sub>2</sub> -e (tons)	276,000	269,000	239,000
Total revenue for the year	NT\$1 million	22,204	22,414	20,928

Note: This table does not include Feb 5 data

## 6.3. Ecological Environment and Conservation

In order to implement ecosystem conservation concepts, Macronix adopted six hectares of land from the Science Park Administration Bureau and turned it into the Macronix Park with thousands of trees and 71 types of plants including banyan trees, camphor trees, red cedar trees, Madagascar almond, bamboo, Chinese fringe tree, cherry blossoms, deciduous trees, and Taiwan golden-rain trees in addition to rare water plants such as waterweeds, water lilies, floating moss, yellow water lilies, creeping burhead, oriental cattail, and ginger lilies, which showcase a totally different landscape each season.



Plantations around plant areas and in the Macronix Park are watered by using recycled rain water, which not only facilitates water conservation, but also serves as the best example for environmental protection. Ecological urban designs for the Macronix Park such as 3D green designs, roof greens, multilayer planting, or ecological ponds also manifest our utmost efforts in protecting the ecosystem.



Macronix Park is open to the public for their enjoyment during regular hours and is also an ideal place for schools and environmental groups to hold ecological education events. Since 2004, Macronix Park has won the "Outstanding Landscape Award" from the Hsinchu Science Park Administration for many consecutive years.



In addition, all Macronix facilities are located inside the Science and Industrial Park. All environmental protection work complies with local government regulations and internal corporate environmental policies and specifications to effectively conserve the ecological environment. Subsequently, environmental awareness is raised to encourage everyone to fulfill their duties as global citizens.

## 6.4. Green Enterprises

### 6.4.1. Green Products

In response to the rising trend of green consumerism and strict international environmental laws on product chemical control, Macronix endeavors to reduce its impact on the environment; starting from its daily operations while also incorporating life cycle concepts into green products to fulfill customer requirements. In addition to reducing environmental pollution caused by our production processes, we also concentrated on managing chemicals in product ingredients. Our green efforts include:

- ◆ Products in compliance with EU Restriction of Hazardous Substances (RoHS) in Electrical and Electronic Equipment
- ◆ Products are lead-free, halogen-free, and can meet the requirements of SVHC (Substance of Very High Concern) published by ECHA (European Chemicals Agency)
- ◆ Obtaining green product certifications from internationally acclaimed customers such as Sony, Canon, and Samsung



## 6.4.2. Green Procurement and Environment, Safety, and Health Costs Accounting Management System

To keep up with international trends, fulfill our environmental and social responsibilities, and to raise the effectiveness of our investments in the environment, worker safety, and health management, Macronix has implemented an environment, safety, and health costs accounting (ECA) management system upon resolution by the ESHC and under the commitment and support of high-level executives during the fourth quarter of 2004. The risk management division formed a cross-department unit to be in charge of planning and building the system in February, 2005 and hosted several training and education sessions to promote the system, which was officially began operations on December 1, 2005.

The Macronix ECA management system not only considers environmental costs that other companies generally take into account, but also includes safety and health expenses. The system evaluates overall investment costs and results with respect to environment, safety, and health management and converts activities of environmental protection (e.g. pollution prevention), worker safety (e.g. operation site safety), and health (e.g. health promotion) into financial or accounting data, which is then used to classify the costs into six categories: corporate operations, supplier and customer up/downstream relations, management activities, R&D, social events, and loss compensation. We thereby use management means or approaches to solve or improve environmental problems as part of our strategy for sustainable operations. Our environmental expenditures and total investment amounted to NT\$380 million in 2015. Details are shown in the table below:

Environmental protection expenditure by category (Unit: NTD)	2015
Cost of waste disposal/Cost of waste gas emissions	95821067
Remediation costs	0
Prevention and environmental management costs (including labor costs)	285396637
Major environmental fines	0
Total	381217704

## 7. Being Grounded Social Dimension

### 7.1. Respect All Employees

#### 7.1.1. Recruitment

##### **Personnel Distribution**

As of the end of 2015, the total number of full-time employees at Macronix was 4,221, while part-time staff was 34, including 20 contract staffs; 14 temporary staffs). Details are shown as below table:

##### **Full-Time Employment Status by Work Type**

Quantitative indicator	2013	2014	2015
General staff	3893	3876	3529
Management (managers and above level)	919	677	692
<b>Total</b>	<b>4812</b>	<b>4553</b>	<b>4221</b>

##### **Management by Gender**

Quantitative indicator	2013	2014	2015
Male (%)	84	85	85
Female (%)	16	15	15

##### **Full-Time Employment Status by Gender**

Quantitative indicator	2013	2014	2015
Male	2627	2458	2315
Female	2185	2095	1906
<b>Total</b>	<b>4812</b>	<b>4553</b>	<b>4221</b>

### Full-Time Employment Status by Age

Quantitative indicator	2013	2014	2015
Under 30 (%)	35	27	25
30~50 (%)	63	69	71
Above 50 (%)	2	4	4

### Full-Time Employment Status by Nationality

Quantitative indicator	2013	2014	2015
Native male employees	2536	2365	2229
Native female employees	1898	1771	1676
Foreign male employees	91	93	86
Foreign female employees	287	324	230
<b>Total</b>	<b>4812</b>	<b>4553</b>	<b>4221</b>

### Full-Time Employment Status by Gender

Quantitative indicator	2013	2014	2015
Direct employee (male)	316	288	263
Direct employee (female)	1611	1545	1374
Indirect employee (male)	2311	2170	2052
Indirect employee (female)	574	550	532
<b>Total</b>	<b>4812</b>	<b>4553</b>	<b>4221</b>

### Contract-base Employment Status

Category	2013	2014	2015
Part-time worker	0	0	1
Long-term contractor	1	8	2
Short-term contractor	19	18	17
<b>Total</b>	<b>20</b>	<b>26</b>	<b>20</b>

\*: Contracts with employment periods longer than three months are considered long-term contracts

## New Hires

In 2015, the net increase in Macronix’s employees was 321, with 228 male and 93 female, successfully fulfilling our business needs in time.

New hires are mainly under 30 years of age, among which 169 are male, accounting for 53% of new hires, and 76 are female, accounting for 24%.

## No. of New Hires Between 2013 – 2015

Gender	Age group	2013		2014		2015	
		No. of person	Percentage	No. of person	Percentage	No. of person	Percentage
Male	Under 30	265	40%	160	30%	169	53%
	30~50	93	15%	88	16%	56	17%
	Above 50	2	0%	2	0%	3	1%
<b>Subtotal</b>		<b>360</b>	<b>55%</b>	<b>250</b>	<b>46%</b>	<b>228</b>	<b>71%</b>
Female	Under 30	250	38%	215	39%	76	24%
	30~50	49	7%	82	15%	17	5%
	Above 50	1	0%	0	0%	0	0%
<b>Subtotal</b>		<b>300</b>	<b>45%</b>	<b>297</b>	<b>54%</b>	<b>93</b>	<b>29%</b>
<b>Total</b>		<b>660</b>	<b>100%</b>	<b>547</b>	<b>100%</b>	<b>321</b>	<b>100%</b>

\*: Percentage = the number of new employees/total number of new employees x 100

## Hiring Employees with Physical and Mental Disabilities

We respect the worker’s rights of people with disabilities as well as adhere firmly to the related regulations. Macronix employed 42 disabled persons in accordance with Article 38 of the People with Disabilities Rights Protection Act. In the case of hiring a person with severe or extremely severe disabilities, this counts as two disabilities hired. As of the end of 2015, we hired 27 employees with physical and mental disabilities, in which 16 employees are severe disabled.

### Status of employees with disabilities

Quantitative indicator	2013	2014	2015
Employees with disabilities	32	30	27

### Turnover Rate

In 2015, 699 employees resigned with 385 male and 314 female; details are shown as following table:

#### 2011 – 2015 resigned employees

Gender	Age group	2013		2014		2015	
		No. of person	Percentage	No. of person	Percentage	No. of person	Percentage
Male	Under 30	192	32%	192	25%	146	21%
	30~50	100	17%	219	28%	231	33%
	Above 50	4	1%	3	1%	8	1%
<b>Subtotal</b>		<b>Subtotal</b>	<b>50%</b>	<b>414</b>	<b>54%</b>	<b>385</b>	<b>55%</b>
Female	Under 30	174	29%	232	30%	172	25%
	30~50	129	21%	124	16%	126	18%
	Above 50	2	0%	2	0%	16	2%
<b>Subtotal</b>		<b>305</b>	<b>50%</b>	<b>358</b>	<b>46%</b>	<b>314</b>	<b>45%</b>
<b>Total</b>		<b>601</b>	<b>100%</b>	<b>772</b>	<b>100%</b>	<b>699</b>	<b>100%</b>

\*: Percentage = the number of resigned employees/total number of resigned employees x 100

#### Turnover Rate of Newly Hired Employees by Gender

Quantitative indicator		2013	2014	2015
New employees*	Male (%)**	5	3	4
	Female (%)**	7	5	3

\*: New employees mean those who have worked for less than 90 days

\*\* : Turnover rate = the number of newly hired employees who resigned/total number of resigned employees x 100

## 7.1.2. Upholding Employee Rights

At Macronix, our hiring and employment, job assignments, and promotion practices are based on individual's abilities and potential, and we do not discriminate against any worker by age, birthplace, race, color, gender, sexual orientation, language, religion, disability, political ideology/affiliations, nationality, social status, financial status, family background, or other status. We continue to make revision to support employment for people with disabilities and endeavor to prevent against prejudice, discrimination, and harassment. We are decided to maintain harmonious relationships between the company and employees from the outset and have never experienced a loss of business due to labor disputes. Based on this relationship, Macronix has received recognition from government and industry authorities. In 2015, Macronix did not receive any complaints or incidents where the rights of local staff or aboriginals were infringed.

### **Employment Transfers**

Macronix is committed to upholding the worker's rights and follows Article 10-1 of Labor Standard Act regarding job re-assignments and workplace relocations: 1. The employee shall be transferred based on the needs of business operation and without improper motives or purposes. Matters not provided for herein shall be governed by other applicable statutes. 2. The wages and other working conditions shall not be changed to be unfavorable to the employee concerned. 3. The employee shall still be able to satisfactorily perform the duties required in terms of physical ability and skills after the transfer. 4. The employer shall provide necessary assistance if the relocated workplace where is too far away for the employee concerned. 5. The livelihood interests of the employee and his or her family shall be considered.

### **Pension Plan**

Macronix sets up its retirement policies according to related regulations in Labor Standard Act. We have established the Pension Supervisory Commission to supervise and manage the pensions and pension related issues. . The Company appropriates pension reserve fund according to the regulations of Labor Pension Act.

- ◆ Pension Contribution Under Labor Standard Act:

Macronix appropriate 2% of the total monthly wages of our employees to the designated account in the Bank of Taiwan every month. As of the end of 2015, the total amount of pension reserve funds are NT\$783,784,373. Each year, in addition to statutory contribution, we invite professional accountants and consultants to conduct the actuarial calculation of our company's pension funds so as to assure sufficient funding for employee pension payment in the future.

◆ Pension Contribution Under Labor Pension Act:

Under the new pension system, the Company contributes 6% of the employees' monthly wage to individual labor pension account. Employees may also voluntarily contribute within 6% of monthly wage to the labor pension accounts.

### **Open Communication Atmosphere**

We respect individual diversity and adopt open-door policy to create an atmosphere of open and transparent communication. Labor management meeting are convened on quarterly to improve of labor-management relations and cooperation, and ultimately to encourage labor participation and boost employee engagement. The meeting topics include production planning, employee activities, benefit and welfare, and improvement of our working environment. We also provide a platform to encourage our staff to communicate, express, and share opinions, including:

- ◆ Hold various meetings regularly based on open communications, new employee orientation, departmental staff meetings, staff (job grade 8 and above) conferences, and labor management meetings, in order to provide clear a clear channel of communication to ensure everyone's voice is heard.
- ◆ Establishing the suggestion box for staff to raise questions, provide suggestions, and file complaints so that the firm can help resolve employee issues.
- ◆ Publishing the Macronix Quarterly magazine and setting up bulletin boards as well as publishing digital announcements to effectively communicate important information, legal regulations, and corporate policies.
- ◆ Setting up the "Our Family" Employee Relations Website, a forum for promoting direct message from management team, while also being a social media platform that promotes the sharing of employee needs and requirements, status update of company and staff, topical discussions on life and culture, and EAP (Employee Assistance Program) where employees can obtain assistance.

Our Family website is deemed to be the bridge between the company and employees that allows Macronix to better understand the needs and issues that employees are facing in real life in order to guide and encourage staff and maintain a strong company-staff relationship.

- ◆ Developing Sexual Harassment Prevention Policies to address the prevention, reporting, and punishment of sexual harassment incidents within the Company, while developing and maintaining gender equality and upholding self-respect.



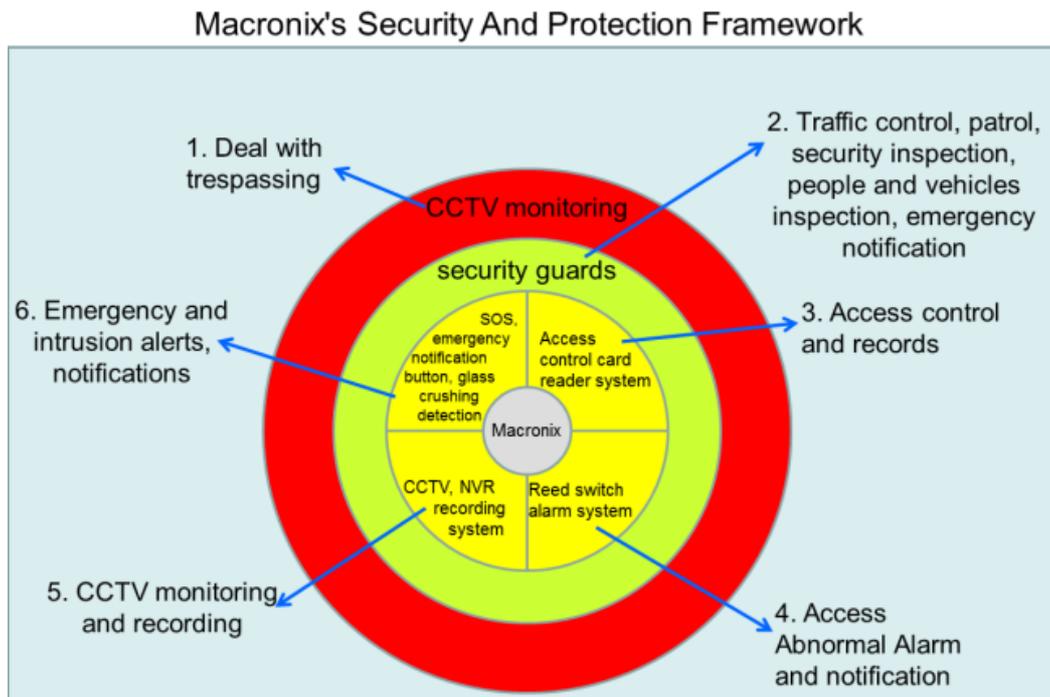
## Human Rights Practices for Security Personnel

- ◆ Macronix's security and protection framework:

With implementing company safety as the core, Macronix has planned external and internal safety control systems to handle invasion reporting, access control (people or vehicles), patrols, cargo (goods) entry/exit management, and servicing employees. When a serious disaster or emergency event occurs, we issue emergency announcements, evidence collection, and handling (without using violent behaviors as means of attack) to maximize our response capabilities and to prioritize in ensuring the safety of our employees and physical properties.

Macronix employs its own security guards and outsources a security company that takes charge of security-related tasks such as directing traffic, patrolling the plant areas, cargo (goods) entry/exit management, access control/CCTV monitoring, investigating violations, parking lot management, servicing employees, and reporting emergencies in order to ensure plant safety. The security office at Macronix is occupied primarily by security guards it

employs as well as the outsourced security company. Depending on task requirements at each plant, security personnel is dispatched. The total number of security staff working different shifts is approximately 30.



◆ Human rights policy training

- Each security personnel who is working at Macronix is required to complete 8 basic training courses during their first 3 months, as well as take 4 professional refresher courses within the first year.
- By taking into consideration human right-based management, we comply with the spirit of SA8000 to set up an educational course on the Sexual Harassment Prevention Act.
- When auditing the outsourced security company for the year, we include scheduled refresher courses for security personnel as well as human rights-related issues as the focus of the interview, in order to ensure that the outsourced security company can follow Macronix's human rights policies.

### 7.1.3. Salary and Welfare Systems

#### **Competitive Compensation Package**

Employee are the most important assets of Macronix, we offer compelling compensation packages to top talent. To attract, motivate, and retain the best talent, Macronix provides attractive and highly competitive compensation packages according to the importance and complexity of the job without prejudice on political ideology/affiliations, gender, and marital status differences. Bonuses are distributed according to individual performances: For example, quarterly bonuses are provided based on the performance of the Company as well as the individual employee. Macronix also distributes annual bonuses based on company profits and employee individual performance. Macronix not only complies with local labor regulations, but actively participates in local salary association to ensure that we provide the competitive salary and benefits package.

#### **Average Salary Ratio of Male and Female Employees**

Personnel Type	Male	Female
Divisional manager	1.07	1
Departmental/Section manager	1.05	1
Indirect employee	1.06	1
Direct employee	0.83	1

## Welfare Benefits

In addition to provide paid-leaves for full-time employees as well as labor insurance and national health insurance, Macronix also offers benefits including:

Welfare Benefits	Description
Leave Programs	We provide leave programs which exceed the requirement of Taiwan's Labor Standard Act. Various types of leaves are granted according to laws and regulations, including maternity leave, parental leave, family care leave, paternity leave, menstrual leave, while annual leave are granted on the first year of starting work.
Insurance Plans	As required by law, we provide Labor insurance, National Health insurance, group insurance (life/accident/cancer/medical treatment), and overseas business travel accident insurance. Employees also have the flexibility to participate in self-pay insurance plans for their family to obtain better protection.
Welfare Subsidies	We provide subsidies for Child birth, marriage and funeral, emergencies, injuries, hospitalization, and extracurricular cultural activities.
Welfare facilities	Employee dormitory, parking lot, restaurants, leisure activity center, green park, convenience stores, cafe, breastfeeding room, and health care room.
Pension Plans	We also conduct seminars regarding the pension related issues. Our pension fund payment and contributions fully comply with related regulations. Thanks to the employee's contribution and hardworking, we also bestow the medal to those retired employees.
Staff Welfare Committee	We established the Staff Welfare Committee in accordance with laws and regulations, and systematically promoted various employee welfare measures.
Employee counseling and services	Provides free psychological consultation and guidance services, health examination once a year, and post-health examination consultation services.



## Unpaid parental leave

In 2015, 367 employees are qualified for taking unpaid parental leaves(236 male and 131 female), of which 52 took unpaid parental leaves (5 male and 47 female). The number of employees return-to-work was 23 (3 male and 20 female). The number of employees who return to work in 2014 and still employed at least 12 months in 2015 was 23, among whom 4 male (100%) and 19 female (73.1%).

### Paternalty Leave and Return-to-Work Ratio by Gender

Quantitative indicator	2013	2014	2015
Male employees eligible for paternity leave: Corporate-wide(including DL and IDL)	246	266	236
Female employees eligible for maternity leave: Corporate-wide(including DL and IDL)	160	144	131
<b>Total</b>	<b>406</b>	<b>410</b>	<b>367</b>
Male employees took paternity leave	2	5	5
Female employees took paternity leave	30	36	47
<b>Total</b>	<b>32</b>	<b>41</b>	<b>52</b>
Male employees that returned to work	0	4	3
Female employees that returned to work	16	26	20
<b>Total</b>	<b>16</b>	<b>30</b>	<b>23</b>
Male employees returned to work at least 12 months after	0	0	4
Female employees returned to work at least 12 months	16	13	19
<b>Total</b>	<b>16</b>	<b>13</b>	<b>23</b>
% of male employees returned to work at least 12 months *	0%	0%	100%
% of female employees returned to work at least 12 months*	94.1%	81.3%	73.1%

\*: In order to better understand the status of employees who returned to work, we revised the formula in 2014: The number of male or female employees return-to-work at least 12 months / The number of male or female employees return-to-work in previous year. We also revised the percentage of employees returned-to-work at least 12 months in 2013

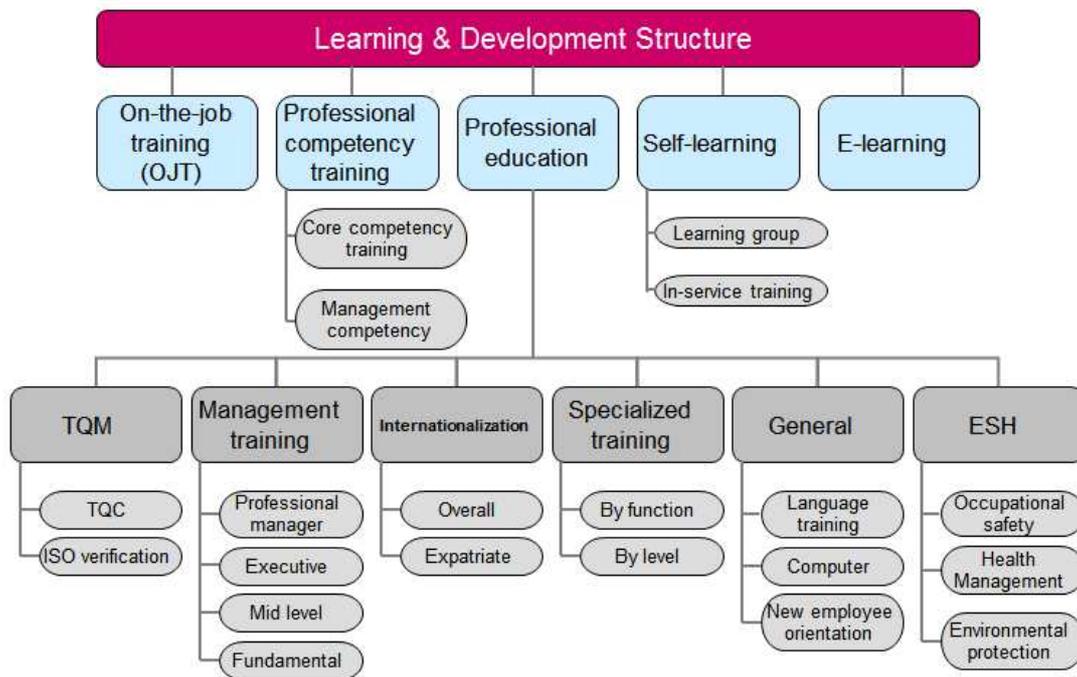
## 7.2. Learning and Development

Macronix believes talents are the foundation and the most valuable assets to the corporation. Hence the firm establishes a comprehensive training system and provides well-structured and constant training plans. This system accommodates different learning paths, competencies, and career ladder structure to provide staff with individual development plan.

Our performance evaluation process and individual development plans are closely connected. Performance reviews are held annually to confirm if the employee is on track for achieving individual performance goals. A face-to-face meeting between employees with supervisors is a must in order to discuss what is needed to achieve employee individual goals and create an individual development plan to broaden and deepen employees' professional knowledge and skills. In 2015, performance appraisal implementation rate for each employee category was 100%.

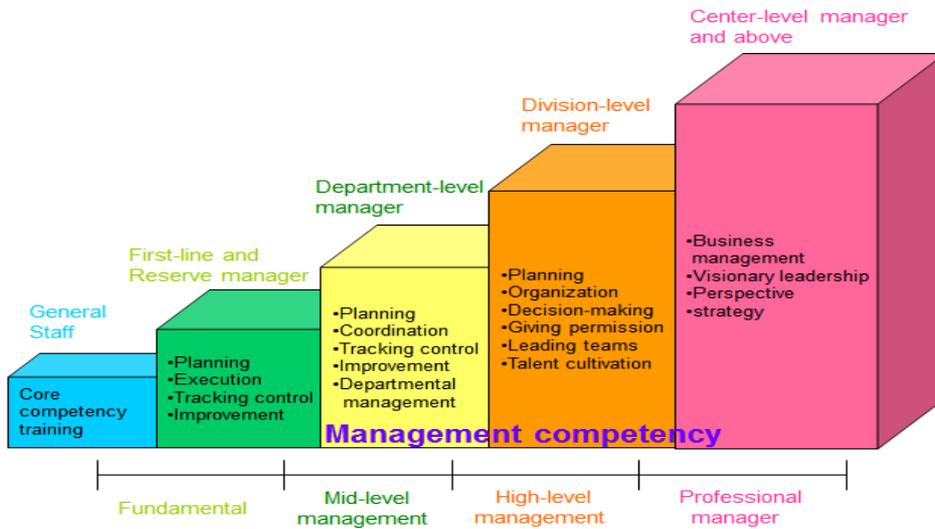
### 7.2.1. Nurturing Talent

Macronix develops a various of training courses according to corporate strategies, job requirements, and individual development. With clear goals and strategic directions, we provide the detailed learning roadmaps to employees to optimize their personal learning paths. The learning roadmaps are a series of activities helping the employee to achieve their goals and develop an extended skill set. The learning roadmaps also provide a list of learning programs helping to increase their learning efficiency.

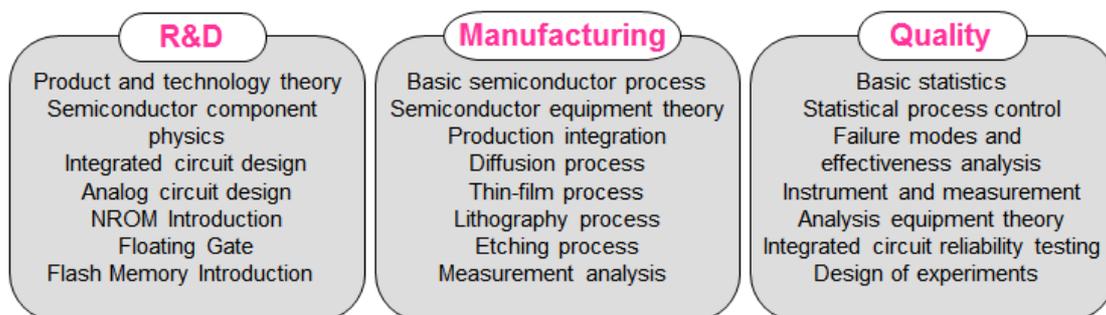


The Macronix learning roadmaps include four categories:

- (1) New employee roadmap: For new employees to become familiar with the corporate culture through experience and learning. This allows new employees to adjust to their new work environment and become immersed in the corporate culture quickly.
- (2) Competency roadmap derived from company values: Courses that are designed to implement corporate values so that employees can demonstrate conducts that are expected by the Company.
- (3) Managerial roadmap for different levels of management: Provides ladder structures in management training and features various courses for different levels of management to strengthen their skills.



- (4) Professional roadmap based on various fields: Guest speakers from within and outside the Company are invited to deliver professional training, with topics including R&D, production, quality, risk management, human resources, administration, sales, and information management to strengthen employees' professional skills.



Macronix also provides multiple learning channels to satisfy a variety of learning needs of each employee. Our measures include:

- (1) Internal training: Guest speakers from within and outside the Company are invited to host various types of training courses.
- (2) External training: Allows employees to participate in external and work-related training courses and conferences.

- (3) On-the-job training (OJT): Allows employees to develop professional knowledge, such as job assignments, hands-on practices, and project participations; employees can acquire the necessary knowledge and skills by performing the tasks.
- (4) Online training: Macronix's e-academy learning platform was established to provide employees with easy access to online courses. Individuals can study at their own paces.

### 7.2.2. Macronix Academy

The Macronix Academy is the platform for employees to continue their learning and development; it has a comprehensive learning system to provide employees with complete and abundant resources for their career development. Through knowledge gathering and sharing, employees enjoy the enriched learning resources to achieve their career goals. Moreover, this helps employees to move to the next advanced stage of their careers and equips them with skill sets needed to successfully overcome various challenges.

Macronix Academy is equipped with facilities and professional equipment required for employees to learn in a positive environment, including:

- (1) Audiovisual room: Contains multimedia computers, books, DVDs, video tapes, and audio tapes. The rich learning platform allows students to learn without boundaries.
- (2) Training classrooms: Macronix provides numerous lecture halls and different-size classrooms that can accommodate different types of course designs.
- (3) Computer classrooms: Personal computer access for all students to significantly increase learning efficiency.
- (4) International lecture halls: 250 seats are prepared, the best location for large-size training courses, conferences, and lectures.
- (5) Library: Features rich and diverse books, periodicals, audio/video resources for employees to satisfy their learning needs



### Employee Training Costs and Hours

Indicator	Unit	2013	2014	2015
Total training cost	NT\$1 million	14.78	11.84	5.87
Total training hours	Hours	160,819	123,781	103,824
Total employees	persons	4,812	4,626	4,221
Total revenue	NT\$1 million	22,204	22,414	20,928
Total training costs/total revenues	%	0.07	0.05	0.03
Total training costs/total employees	(NT\$1/person)	3,071	2,560	1,390
Total training hours/total employees	hours/person	33.4	26.8	24.6

### Average Training Hours for Various Types of Employees

Employee Category	Unit	2012	2013	2014	2015
General employee	hours/person	31.7	34.8	26.7	24.5
Managerial Staff	hours/person	30.0	35.1	28.1	25.2
Male employee	hours/person	42.1	47.7	38.1	33.0
Female employee	hours/person	24.2	21.5	17.5	14.4

## 7.3. Work-Life Balance

Warmth, happiness, and growth are the vision of Macronix human resource management.

An enterprise is like a big family, and at Macronix we provide our staff with the care and attention that any other family would. With empathy, we respect, understand, and care for the work and life of our staff and extend this caring to their families. This makes employees treat each other in a mutual trust and cooperation way. Following the philosophy of humane management style, we provide staff with high flexibility and autonomy at work and continuously encourage staff to actively make valuable innovative solutions to our nonvolatile memory solutions. Hence the firm has been able to present top technical papers at the International Electron Devices Meeting (IEDM), VLSI Symposia, and International Solid-State Circuits Conference (ISSCC), receiving worldwide attention on its forward-looking R&D outcomes. Macronix believes that respecting individual diversity, and adopting open-door policy to create an atmosphere of open and transparent communication. We routinely hold management communication meetings, conduct labor management meetings, set up staff suggestion boxes, and publish the Macronix Quarterly e-newsletter in order to provide a platform to encourage our staff to communicate, express their ideas, and share their voices. Macronix adheres to the Macronix CSR Policies, devoting its utmost effort in construction a superior human resource management system and labor system with its perfect planning and execution abilities, to comply fully with local labor laws and regulations and the SA8000 specifications.

A happy staffs are usually those employees with highest efficiency. Macronix provides competitive compensation packages, humanistic management system, top recreation and leisure infrastructure, and colorful extracurricular activities to motivate staff enjoy working. These measures also help staff nurture active and positive work values, broaden the horizons, enable passion sparked and express the strengths. The firm hopes staff can find happiness, values, self-confidence, satisfaction and pride in the work they do.

Talents are the foundation and the most valuable assets to the corporation. Hence the firm establishes a comprehensive training system and provides well-structured and

constant training plans. This system accommodates different learning paths, competencies, and career ladder structure to provide staffs with individual development plan. To achieve the goal of continued growth for the firm and staff, Macronix has various types of training programs that are in line with corporate strategies and organizational development. The programs adopt innovative and diverse teaching methods with the aim of enhancing staff knowledge, skills, and capabilities that will then transform into strengthening the firm's competitiveness.

We believe that a comfortable working and learning environment will bring out staff additional growth potential and renewed energy, which is the driver of success. Hence, Macronix works hard to build a work environment that allows staff to be healthy physically, psychologically, and spiritually. The firm practices the value of caring for its staff through its management system to improve the internal environment and increase harmony between the staff and the management team in order to build a warm, happy, and growing family.

### 7.3.1. Macronix H2O

Macronix believes that a staff with physically and psychologically healthy is the essence to make for a successful enterprise. Hence Macronix strives to provide an excellent work environment for staff and promotes various approaches to take care of employee health. In terms of infrastructure, we establish a fitness center and a green park, and provide benefits such as health examinations. Our employees benefit from an energetic work environment but also are encouraged to enjoy the vigorous life!

We hope that all employees work in a healthy and happy way. Moreover, Macronix hopes that employees can achieve a healthy work-life balance. Thus, we continuously promote the H2O Corporate Wellness Program for providing employees with comprehensive care. Therefore, Macronix uses H2O as a slogan to advocate and encourage employees to enjoy work-life balance and help create an enlightened future with the company.

**H2O = Health. Happiness. Openness to life.**

#### (1) Health: An elegant recreation and fitness center

To provide an excellent recreational environment for our employees and their families, Macronix has taken a leading position in the industry by establishing the most comprehensive and comfortable employee recreation and fitness center. The center includes a video game room, fitness room, racquetball courts, aerobics classrooms, karaoke room, and multi-purpose indoor courts to provide employees with the most comfortable and healthy place for enjoying recreational activities.





#### (2) Health: Clean, healthy, and delicious meals

Macronix cooperates with firms that have achieved HACCP standards to provide food with no MSG and low in sodium and oil. Cooperating firms also have professional nutritionists to ensure the healthiness of the daily cuisine while the managing units routinely publish food safety inspection results. Furthermore, Macronix routinely inspects kitchen safety and food cleanliness, as well as fire safety management to ensure that employees can eat healthily. Hence, Macronix has received the honor of being a healthy catering organization and providing for a non-smoking restaurant environment.

#### (3) Health: Comprehensive Employee Assistance Programs (EAPs)

Macronix has integrated external professional resources and gathered teams from the Employee Relations Department, Health Promotion Office, and the Performance and Learning Development Department to establish employee-support services and implement the Employee Assistance Program (EAP); in combination with a professional consulting agency to provide 24-hour psychological, legal, and financial counseling services free of charge for our employees. We hope that these efforts will be able to help employees deal with a variety of issues such as health, marriage, family, finance, law, emotions, stress, and work, thereby assisting employees in solving difficulties in their everyday lives and at work.

#### (4) Happiness: Convenient and safe LOHAS services

Macronix provides complete life management services with optimal comfort and support in the work environment. The Company has set up convenience stores onsite as well as vendors/stores to satisfy the nutrition, clothing, living, traveling, education, and recreation needs of employees. We hope employees enjoy working under such a worry-free environment!

(5) Happiness: 5-star employee dormitories

The Macronix employee dormitory features 16,000 square meters and is situated in the beautiful community. The dormitory can house 1,000 employees. The dormitory has a living room, restaurant, training classrooms, game room, elevators with views, garden, parking lot for cars and motor scooters, and a 24-hour centrally controlled security system to provide a safe and comfortable living environment for employees.



(6) Happiness: Full convenience

Macronix provides employees with various on-site convenience services such as convenience stores, coffee shops, laundry services, and travel agencies; therefore, employees can complete daily activities while at work. In addition, Macronix has agreements with various vendors to provide employees with multiple choices.

(7) Lifestyle: Seminars on Happiness

Macronix aims to improve the quality of life for its employees. Hence the firm establishes a series of seminars on daily living and leisure to bring energy and growth for our employees and their families. We hope employees can achieve a perfect balance between family, health, friends, and spirituality in order to have satisfying, healthy, and happy lives!



### (8) Life Satisfaction: A Wide Selection of Clubs

In order for employees to achieve a work-life balance, Macronix offers more than 30 clubs such as creative balloon design, Chinese calligraphy, sports, hiking, ukulele, and photography, as well as religious clubs such as Humane Society and Big Love Society for staff to make friends and discover new hobbies.



### (9) Lifestyle: Lively and Innovative Celebrations and Activities

Celebrations for Family Day, Sports Day, Engineer Day, Father's Day, and Mother's Day are organized, during which employees can enjoy the warm and happy atmosphere of these special events. Through these activities, employees can also show their friends and families their working environment and lifestyle.



## 7.3.2. Safety and Health Promotion Management

### **Occupational Safety and Health Management**

Macronix is fully aware of the impact of employee safety and health on our corporate competitiveness, therefore Chairman Wu has always played the role as the Company's advocate ever since Macronix's inception in 1989; he urges employees to take environment, safety, and health management seriously, requests executives of various levels to participate in safety and health management tasks, and encourages employees to suggest improvements related to workplace safety. Moreover, Chairman Wu actively introduced various international certification standards during the planning stages of Macronix's environment, safety, and health management systems, so that we could build a comprehensive platform. We have strict and complete environment monitoring procedures to continue monitoring the air quality work environment and ensure employee health and safety. We periodically evaluate and review our management measures according to government regulations and customer's requirements.

Thanks to the efforts of our employees, Macronix received OHSAS18001 Occupational Health and Safety Management Systems Certification in 2002. We have implemented "high-quality environment, safety, and health culture" as part of the corporate value that drives our sustainable growth. In 2009, we also received the third annual National Occupational Health and Safety Award, a top honor recognizing labor safety achievements in Taiwan.

In the future, Macronix will continue to promote employee safety and health and build a work environment with a high-safety level.

In 2015, major health and safety awards received by Macronix in recognition of its achievements include:

- An Award of Gratitude for Safety and Health Guidance
- Health Promotion Badge - Top Honor for an Accredited Healthy Workplace
- Excellent Healthy Workplace - Health Leadership Award



Macronix has also established the Occupational Safety Health and Environment Committee (OSHEC) led by the Macronix President to oversee the promotion and execution of environmental protection, safety, and health work. Macronix OSHEC is composed of 6 managers, 4 directing supervisors, 15 labor representatives, 7 technical engineering representatives, 11 environmental, safety, and health representatives; labor representatives account for 34%.

Macronix OSHEC convenes meetings at least once every quarter, mainly to discuss the Company's environmental, safety, and health management operations, organization, and supervision issues, as well as to track the progress of various projects. Each manufacturing facility holds monthly or quarterly meetings to review the execution of different initiatives.

We offer employees adequate personal protective equipment (PPE) and complete safety and health education and training. We have also established a 24-hour emergency response team (ERT) that works four shifts in rotation. The business continuity program (BCP) has also been instituted to ensure employee and corporate safety. We conduct periodic checks and repairs on fire safety equipment and public safety for buildings. Escape and evacuation drills are also practiced regularly to improve employees' ability to react to emergencies. The work environment is also inspected regularly for comfort.

In addition to establishing standard operation procedures, the following measures have been taken to prevent any occupational hazard and diseases from impacting employees and corporate operations:

- Professional audits and 24-hour monitoring are provided
- All accidents are investigated, and followed up with related safety improvements in order to prevent any reoccurrence or further incidence

- Training for new and current employees and PPE management are provided
- Occupational safety meetings are conducted at each level
- Monitor work environment and continue improving occupational safety according to regulatory requirements
- A 24-hour health service center is available for conducting professional health examinations and health management, while healthy activities such as, seminars, psychological counseling, and an employee fitness and activity center are provided
- An employee assistance program (EAP) has been implemented and specialist doctors on occupational diseases have been invited on-site to guide and instruct employees concerning work safety and health.
- Regular doctor visits are scheduled at our facilities: to provide medical advice to employees, help conduct evaluation on health risks, and assist with health management at different levels.
- A dedicated unit in charge of protecting against epidemics collects the latest information about epidemics and diseases and then integrates any related epidemic control measures to safeguard employee health.
- Complete employee assistance programs are provided as well as psychological counseling.
- Pregnant employees are cared for by implementing the "Three no's", no night shifts, no heavy lifting, and no radiation work, to offer a friendly workplace.

### **Macronix Disabling injury-Related Indicator in 2015**

Category	Macronix Employee			Contractor		
	Male	Female	Total	Male	Female	Total
Occupational Injuries (cases)	2	0	2	0	0	0
Occupational Diseases (cases)	0	0	0	0	0	0
Work days lost (days)	7	0	7	0	0	0
Number of hours absent	17001.75	10208	27209.75	-	-	-
Total hours worked	4523520	3886080	8409600	2390400	355200	2745600
Injury rate (IR)	0.088426712	0	0.047564688	0	0	0
Occupational disease	0	0	0	0	0	0

Category	Macronix Employee			Contractor		
	Male	Female	Total	Male	Female	Total
rate (ODR)						
Lost day rate (LDR)	0.309493492	0	0.166476408	0	0	0
Absence Rate (AR)	0.003770902	0.002626812	0.003242217	-	-	-
Total number of occupational deaths	0	0	0	0	0	0

Note:

1. Types of work injuries calculated by work-related injury statistics
2.  $IR = (\text{No. of disabling injuries} \times 200,000) / \text{total hours worked}$
3. Occupational disease rate (ODR) =  $(\text{No. of occupational diseases} \times 200,000) / \text{total hours worked}$
4. Lost day rate (LDR) =  $(\text{total work days lost} \times 200,000) / \text{total hours worked}$
5. Absentee rate (AR) =  $(\text{Number of hours absent}) / \text{Total hours worked}$ , leaves of absence include: Occupational injury leaves, personal leaves, sick leaves, and menstrual leaves
6. LDR is calculated based on calendar days starting from the day after the incident occurred
7. Statistics include full-time and part-time employees

## **Health Promotion Management**

People working in today's world often experience high work stress. Since employees are our most important asset, therefore Macronix actively examines employees' physical and mental health problems. Only with physically and mentally healthy, happy working partners can the Company be filled with vitality and sustain its operations; this is the management concept of Macronix.

- ◆ Continued to promote the Macronix Sports Day Program (since 2011):
  - (1) Supported and led by the chairman and executives of various levels (the Company's activity center has been used by more than 50,000 on average in the past 3 years).
  - (2) Established diverse, active clubs: with 18 types of sports clubs in total.
  - (3) Organized seminars on sports injury prevention/muscle ache prevention, in which participants are taught how to relax their muscles to prevent the effects of a sedentary lifestyle and stress, as well as musculoskeletal injuries caused by incorrect body posture. Monthly/quarterly health education seminars and office exercise sessions are held for each plant/department.
  
- ◆ Weight loss course:
  - (1) We continued to introduce cardiovascular disease seminars, invite nutritionists to provide meal plan for weight loss, and host sports speech (open to all employees).
  - (2) Health education messages are periodically displayed a slideshow on LCD TV, online courses, and posters.
  - (3) Employees are encouraged to develop a habit of exercising: Employees who log their exercise achievements on a weekly basis and reach their weight loss goals are awarded with exquisite gifts; they are also invited to share their experiences with other employees.
  
- ◆ In order to increase the number of participants in health-promotion activities, we survey the needs of our employees each year to plan appropriate health-promotion activities and promote health-related issues during monthly/quarterly departmental

meetings (employees can choose the topics they prefer or issues relating to disease prevention/regulatory requirements); these promotional activities have received enthusiastic responses from our employees. We support the screening for four types of cancers (colorectal, breast, oral, and cervical cancer) provided by the Health Promotion Administration to ensure the health of our employees. In 2015, Macronix collaborated with hospitals to provide free low dose chest CT scans for employees to assist with disease prevention and provide subsequent health care. A total of 227 employees took advantage of this service.

◆ Maternal worker health management:

- (1) Care plans for female employees are introduced to implement maternal health care measures that allow employees to work at ease while also caring for their families. Mothering classes and cancer screening activities for women are held regularly to provide health-related information. Each plant has set up a breastfeeding room that offers comfortable equipment exclusively for employees who need to breastfeeding. We also offer small gifts to employees who have been breastfeeding for more than 6 months.
- (2) In 2015, Macronix participated in an industrial safety expert platform conference hosted by the Hsinchu Science Park to facilitate counseling of small and medium plants (regarding maternal protection and management): We have counseled three partner firms.
- (3) Received the Gold Award, Award of Excellence, and Outstanding Award for the Breastfeeding Room from Hsinchu City Government for three consecutive years (2013–2015).

◆ Because working in the high-tech industry is often competitive and stressful, the Company has planned a long-term EAP for arranging a series of stress-relieving seminars, inviting psychologists to provide consultation services at the plants (consultations can also be provided outside of the Company by calling a toll free number), and having visually impaired masseurs/masseuse to provide massages.

◆ Awards & achievements in 2015

Award Title or Item	Awarded by	Photographs
<p>Health Promotion Badge - Top Honor for an Accredited Healthy Workplace</p>	<p>Ministry of Health and Welfare Health Promotion Administration</p>	
<p>Health Promotion Badge - Top Honor for an Accredited Healthy Workplace</p>	<p>Ministry of Health and Welfare Health Promotion Administration</p>	
<p>Hsinchu City Government Breastfeeding Room Contest Award of Excellence in Workplace Group</p>	<p>Hsinchu City Department of Health</p>	
<p>Healthy Workplace - Health Leadership Award</p>	<p>Hsinchu City Department of Health</p>	
<p>Excellent Healthy Workplace - Health Leadership Award</p>	<p>Ministry of Health and Welfare Health Promotion Administration</p>	



Best Vitality Award for the nationwide Workplace Healthy Exercise competition



Cooperated with health-promotion social groups and health service centers



Seminar on muscle pain prevention



Blood drive charity event

## 7.4.Social Welfare

Since the inception of Macronix in 1989, we have always insisted on deeply cultivating our own technical strength and have been committed to helping enhance Taiwan industry's R&D capabilities and technology innovations. Macronix manufactures important electronic components that help enrich people's lives. As a member of the global market, we are mindful to maintain sustainable operations and continue to augment shareholder interest and care for the environment. Macronix never forgets to feedback the society that nourishes us. We believe it is only by constantly fostering technical talent that Taiwan can maintain its leading position worldwide and outperform international competitors. Accordingly, Macronix made donations to found the Macronix Education Foundation in 2001, chaired by the Chairman of Macronix, Miin Wu. Macronix donates the Foundation more than NT\$20 million to hold its primary events. Macronix employees also participate in the Foundation's activities. It is anticipated that through the strength of the Macronix Education Foundation, resources can be maximized systematically, enabling more people to participate, thereby activating the innovative competency of the younger generations to expand the knowledge and perspectives of our domestic scholars.

Due to our long-term efforts in cultivating science education, the Macronix Education Foundation successfully organized science competitions including the Macronix Golden Silicon Awards and Macronix Science Awards. For 16 consecutive years, over 20,000 teachers and students participated in these competitions with extreme enthusiasm. Over NT\$90 million in scholarships have been awarded. In 2013, Macronix Education Foundation participated in a rating evaluation conducted by the Ministry of Education for the first time and received the highest rating.

We have devoted longtime efforts to community involvement, particularly in the three main areas of science education, emergency aid, and cultural creation.

In recognition of our achievements, Macronix has won Corporate Citizenship Awards (2010-2012) from CommonWealth Magazine as well as CSR Awards (2009, 2010, and 2012) from Global Views Monthly.

### 7.4.1. Planting the Seed of Science Education

By focusing on cultivating basic science knowledge and nurturing talented knowledge engineers, the foundation continues to implement the Future-Knowledge Engineering Program because we know that education is a foundation that must be planned and promoted continuously. In addition, the foundation holds various activities for different groups, including the Macronix Golden Silicon Awards, Macronix Science Awards, Macronix Chair Professor Project, and support for national science education to foster scientific talent in Taiwan.

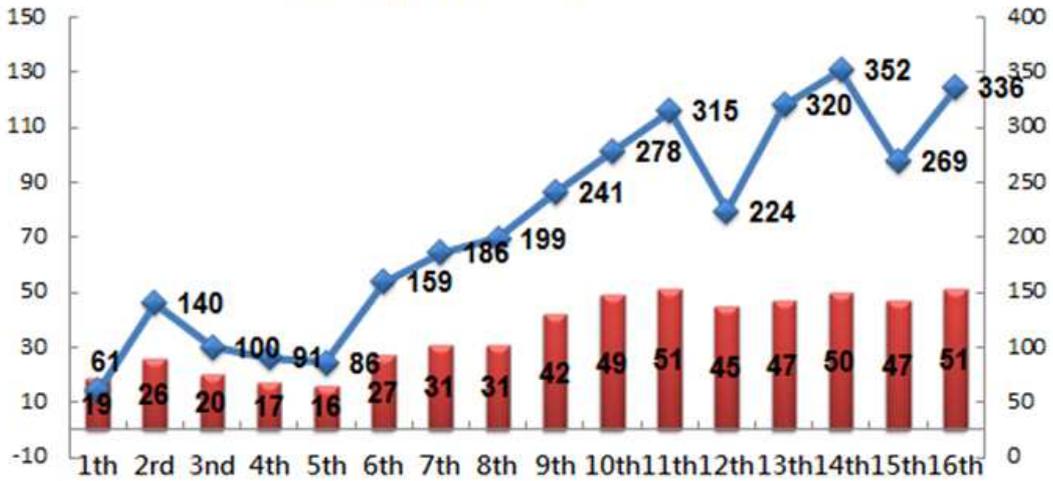
#### **Macronix Golden Silicon Awards**

To inspire college students' creative spirit and hands-on experience in semiconductor research, the Macronix Education Foundation held the first Macronix Golden Silicon Awards - Semiconductor Design and Application Competition in 2000. Now entering its sixteenth year, over 12,000 students and teachers nationwide have participated in these competitions. The Macronix Golden Silicon Awards is regarded as the most important competition by electronic and electrical engineering students to evaluate their performance before graduation. Envisioning the trends of the industry's development, Macronix continues to incorporate a wide variety of applications such as green energy, biomedicine, robotics, digital homes, and automotive electronics into the Golden Silicon Awards. In 2015, Internet of Things (IoT) was also included. The goal to add a new category of competition was in order to attract and encourage students to propose innovative ideas and exciting creations in relevant domains, thereby further stimulating domestic research trend.

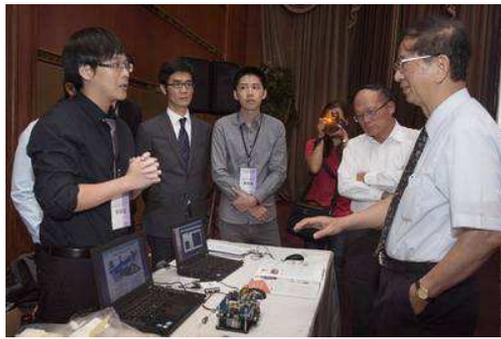


The 15th Macronix Golden Silicon Awards Ceremony

Participation statistics through 16 years.



	1th	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th
Participating Schools	19	26	20	17	16	27	31	31	42	49	51	45	47	50	47	51
Participating Teams	61	140	100	91	86	159	186	199	241	278	315	224	320	352	269	336



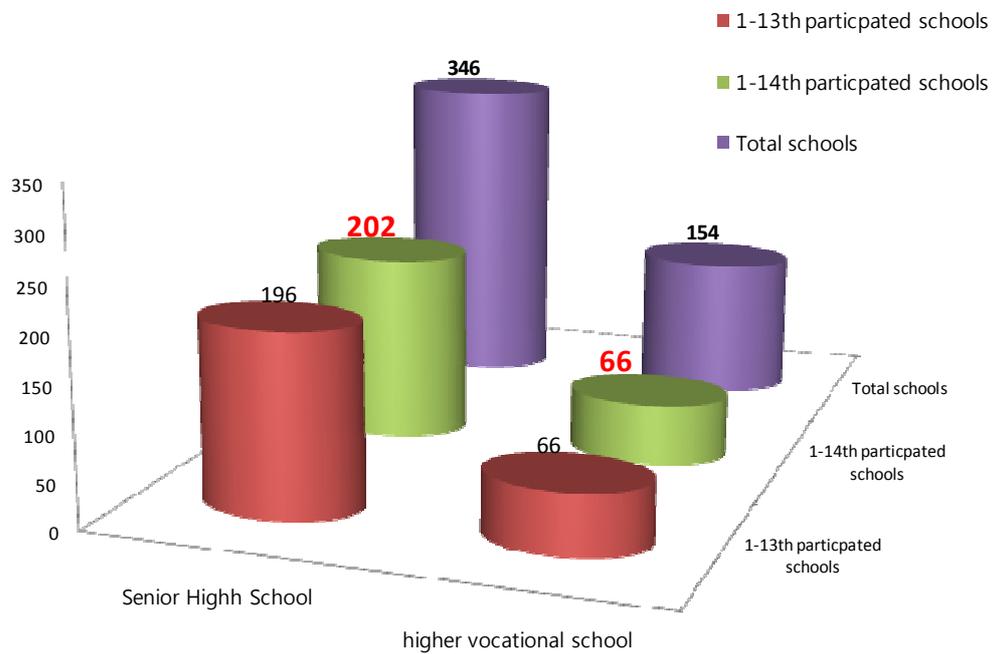
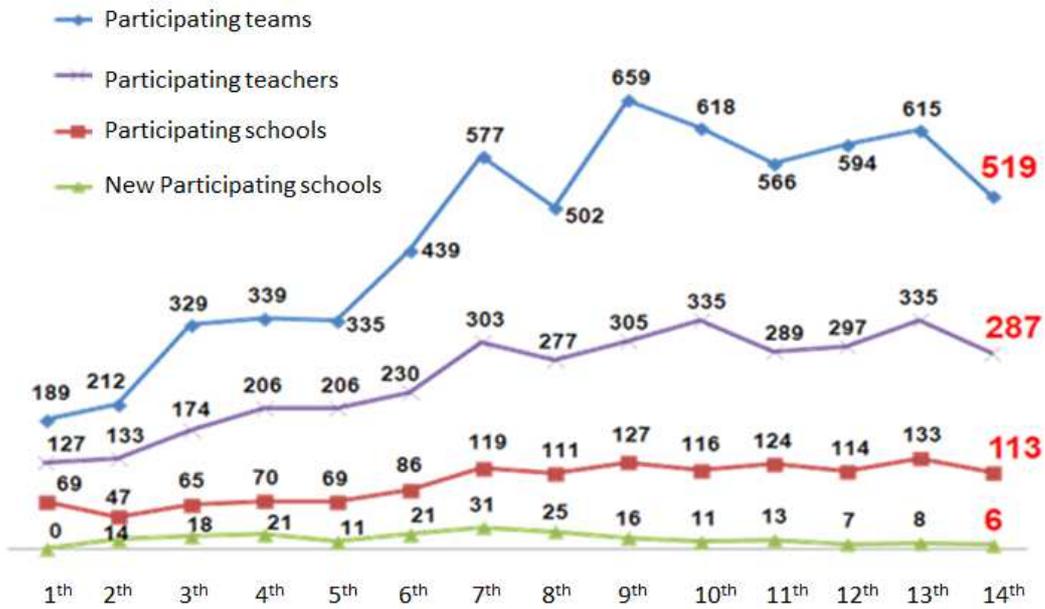
**The former president of Academia Sinica, Dr. Yuan-Tseh Lee, has diligently attended the Macronix Golden Silicon Awards ceremony for 15 consecutive years; he always listens wholeheartedly to award-winning students' creative works.**

## Macronix Science Awards



To inspire senior high school students' interests in natural and applied sciences and encourage them to explore science, develop their potential to innovate, think outside the box, and learn outside the classroom, the Macronix Education Foundation held the first Macronix Science Awards in 2002 with Chia-Tung Lee, Emeritus Professor, National Chi Nan University, serving as the convener.

The number of participating students and schools has grown from 189 teams in the first year to a total of 519 teams comprising 12,000 participants by the fourteenth year. Over half of high schools across Taiwan have participated in the Macronix Science Awards, which has been acclaimed in Taiwan as the "Nobel Prize for senior high school students" due to its vast influence.



## **Macronix Science Awards Association**



To extend the creative spirit of Macronix Science Awards, the foundation established the Macronix Science Awards Association in September 2004, which is made up of all previous winners and totals 254 members. Through the association, new award winners can associate with previous winners of the Macronix Science Awards and expand their scientific horizons, thereby helping each other, grow together and form lifetime bonds.

The foundation has a special team to guide the association officers in the planning and execution of the association's annual meetings. Various seminars are held from time to time inviting Macronix Science Awards committee members and leaders in technical, social, and cultural fields to inspire members to explore life and knowledge in a relaxed, dynamic and enjoyable manner.

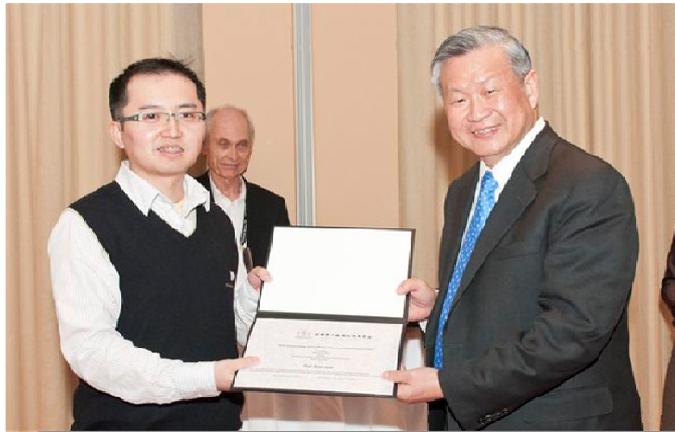
### **Macronix Chair Professor Project**

Macronix has setup the Macronix Chair Professor Project that helps academic institutions in Taiwan offer positions for VLSI and SoC experts such as Professors Chia-Tung Lee and Yung-Sheng Liu to teach specialized courses. By doing this, Macronix hopes that students have a chance to learn about state-of-the-art technologies and keep up with the latest industry developments. The company also encourages the participation and collaboration of industry, academia, and research!

## **Sponsoring Important Science Organizations**

The Macronix Education Foundation continues to support major organizations devoted to promoting fundamental science education, including the Wu Chien Shiung Education Foundation, Yuan T. Lee Foundation Science Education for ALL, and Boyo Social Welfare Foundation. The Company also occasionally sponsors domestic universities, such as NTU, NTHU, NCTU, NCKU, as well as research institutions including ITRI and National Nano Device Laboratories. In addition, the Macronix Education Foundation periodically sponsors colleges to organize EE camps or invite students to visit Macronix for popular science education.

To maximize its influence, the Macronix Education Foundation has also been donating US\$4,000 every year since 2012 to the International Organization of Chinese Physicists and Astronomers (OCPA) for the Outstanding Young Researcher Award (Macronix Prize) to encourage young overseas Chinese researchers in the fields of Physics and Astronomy to jointly promote high-tech developments. So far, scholarships have been awarded to five recipients.



**Mr. Miin Wu presenting an award to  
the first winner of the Macronix Prize**

The Foundation has invested considerable efforts in the popular science domain, which is why the National Taiwan Science Education Center invited the Foundation to attend the 2014 Popular Science Forum: Expansion and Integration of Popular Science, as well as the 2015 Popular Science Forum: Science and Everyday Life - Practicality and

Creativity of Popular Science, where the Foundation's representatives shared their experiences and innovative practices with industrial, academic, and research units involved in the promotion of popular science. The knowledge shared can serve as a reference for domestic future promotion of popular science education.



**Macronix Education Foundation was invited to the 2014 Popular Science Forum to share interdisciplinary experiences and innovative practices**

#### 7.4.2. Employees Participating in Charity Events

Macronix takes active steps in fulfilling our social responsibilities and we have compassion for those in need during the occurrence of major emergencies, such as the major 921 earthquake in Taiwan in 1999, the Sichuan earthquake in China in 2008, and the Typhoon Morakot flooding in Taiwan in 2009. Macronix immediately made donations to help the victims after the major 921 earthquake in Taiwan in 1999, the Sichuan earthquake in China in 2008, the Typhoon Morakot flooding in Taiwan in 2009 and the 311 earthquake in Japan.

By actively establishing charity clubs, raising funds for the clubs and helping with allotting club meeting sites and human resources, we show our enthusiasm and support for social charities to all Macronix employees and deeply endow the DNA of social responsibility in the hearts of our employees.

**Humane Society**

Macronix set up the internal employee charity club, called the Humane Society, in March 2001 with the purpose of helping those in need and increasing social harmony. Under the work of a group of loving Macronix employees, the Humane Society works together with efforts of other charity organizations such as the Hsinchu Taiwan Fund for Children and Families to help the underprivileged in Hsinchu. The Humane Society was approved by the Hsinchu City Government in 2008 to change its name to the "Humane Society Service Organization".

Humane Society Activities	
The Macronix Family Sponsorship Drive	The Macronix Family Sponsorship Drive has entered its 10th year and currently sponsors 164 children every month, with total donations in 2015 amounting to NT\$1.99 million. The drive sponsors children from eight charity organizations including the Taiwan Fund for Children and Families (aboriginal children), Sacred Heart Home, Miracle Home (teenagers), World Vision, Humane Society Service Organization, Horseback Riding Therapy Center, St. Francis Organization, and Eden Social Welfare Foundation.
The Fishing Pole Project	This project is going into the sixth year based on the successful collaboration with the Eden Social Welfare Foundation in 2010-2011 and the Qi Zhi Vocational Training Center in 2012. Macronix employees order bread (at a price of NT\$250) from the Children Are Us Foundation's bakery so that the mentally challenged can learn to bake and sell pastries. In 2015, 270 employees made orders for a total amount of NT\$402,500.

Humane Society Activities	
<p>Christmas Making Dreams Come True Initiative</p>	<p>For many years, the Humane Society has been organizing employees to donate Christmas gifts for needy children. We have generated great success with these events in 2015 and every child has received the gifts they wished for.</p>
<p>Re-usable item donation</p>	<p>Every year, Macronix hosts donations of second-hand items, in which employees donate clean, intact, undamaged items to recycle as well as assist groups that are in need. Donations were made to the St. Joseph Social Welfare Foundation and sunrise opportunity center in 2015.</p>



### Big Love Society

The Macronix Big Love Society was the first social club in the Science Park established for medical charities. Its first phase goal is promote "10,000 Organ Donor Signups with Their National Health Insurance Card" initiative. Since 2008, the Big Love Society has been participating in major promotional events and also working with volunteers and medical staff of the NTUH Hsinchu branch to engage in street-side campaigns at the Hsinchu Train Station to promote the "Organ Donor Signups with Their National Health Insurance Card" from 10 AM to 4 PM on the last Saturday of each month. Twelve such activities were held in 2015 with 551 people having signed to donate their organs.

In addition, the Big Love Society also initiated a charity event to collect monthly donations for Boyo Social Welfare Foundation to help disadvantaged children attend

classes. 223 people participated in 2015, donating approximately NT\$1.72 million in total.

### **Photography Club**

Tunan Elementary School, located in a remote mountain area in Hsinchu County, was unable to hire a photographer to take pictures for graduating students due to a lack of resources. Macronix's photography club members voluntarily went to the school to take on the photography job, receiving strong support from school staff members and students at the end of 2013. With the concerted efforts of Macronix employees and volunteering photographers in 2014, we helped graduating students from Tunan Elementary School in Hsinchu County to produce the first-ever yearbook in 50 years of the school's history. In 2015, Macronix expanded the scale of this event by continuing with the yearbook activity as well as establishing a small photography class, in which students can be exposed to photography and capture the bits and pieces of their daily lives at school through their eyes. With the photographs the students took, they can then create their own yearbooks!



### **Animal Club**

The Animal Club was established to help take care of stray animals with dedication, love, and compassion, by embracing the principles of respecting life, caring for life, and advocating the concept of respecting an animal's life as well as protecting the environment.

Animal Club Events	
Adoption of stray dogs	Every week, volunteers host an event at a flower market in Hsinchu to allow people to adopt animals, to raise awareness about abandoning their pets, and to gather volunteers from the Company as well as students from local high schools and college charity groups. This event enables more people to learn to respect life and mitigate social problems caused by stray animals. In 2015, the Animal Club has helped 250 dogs find new homes; it also conducted follow-up checks to see how the dogs are doing in their new homes to prevent pet abandonment, which would otherwise intensify environmental and conservation problems.
Neutering/spaying in place of Killing	Neutering/spaying rather than killing not only effectively resolves the problem of too many stray dogs, but also manifests the act of having respect for life. The Animal Club neuters/spays at least 500 stray animals per year on average, over 550 stray animals were neutered/spayed in 2015.
Animal Rescue in Action	The Animal Club receives public call-ins from Hsinchu County/City and nearby counties, assists with rescuing injured animals, and captures stray female dogs to have them spayed in veterinary hospitals.
Animal shelter cleaning and daily feeding	Stray dogs in animal shelters are fed every day at a specific time, and cages in the animal shelter are cleaned everyday.
Charity sale on family day	A charity sale of second-hand items was held on Macronix family day in 2015. Proceeds were donated to help stray animals and promote awareness on animal adoption.
Rabies vaccine for stray dogs	The Animal Club helps Hsinchu City Government provide rabies vaccination for stray animals and home reared pets, a total of 850 animals received injections in 2015.



### 7.4.3. Fostering Local Culture and Creative Industries

#### **Inviting Cutting-Edge Taiwan Artists to Design Award Trophies**

The Macronix Golden Silicon Awards and Macronix Science Awards have been awarded for more than a decade and have become a major battleground for scientific competition in Taiwan. To cultivate local artists, Macronix Education Foundation has set an example by inviting different local artists to custom-design the trophies every year. For 15 years, the Macronix Education Foundation has supported local sculptors with donations of over NT\$1 million every year, with the total reaching NT\$15 million over the years with more than 20 artists benefiting from the pledge. These creations are the spiritual fruit born of the 10 plus artists and have allowed over 24,000 participants a chance to appreciate the art as they cheer for winning the awards.



**Working with the National Taiwan Craft Research Institute to jointly promote local artists' works.**

Besides inviting domestic artists to design the trophies for the two benchmark awards, since 2009, Macronix has cooperated with the National Taiwan Craft Research Institute to purchase creative artworks from artists certified by the Institute as gifts and souvenirs for guests attending the award ceremonies. Macronix even boldly adopted some works not yet in mass production with the aim of promoting local arts in a variety of ways. Through the cooperation process, the institute can also get feedback from Macronix and thereby perfect their craftworks for successful commercialization.



**Po-Ching Liao's "Switch" from the Taiwan Craft Research Institute was offered as gifts at the ninth Golden Silicon Awards.**



**Hsinchu local artist An-Fu Huang, recommended by the Taiwan Craft Research Institute, created glass art featuring playing musicians based on the Golden Silicon Awards ceremony theme of an opera house.**

### **Summoning the Technology Industry to Host the Art Exhibition for Promoting Art Education**

In order to promote art education, Macronix Education Foundation summoned Macronix employees and several art clubs from various high-tech companies including MediaTek, Realtek, Applied Materials, UMC, OptoTech, and General Biologicals Corporation (GBC) to organize an art exhibition in the Exploration Hall of Hsinchu Science Park from August to December, 2015; nearly 40 artworks including oil paintings and zentangles were on display. This exhibition reveals the sensible and humanistic aspects of technologists, and also highlights our employees' motivation to cultivate diverse interests and skills outside of work; this is the concept of the balance between work and life which Macronix has always promoted.

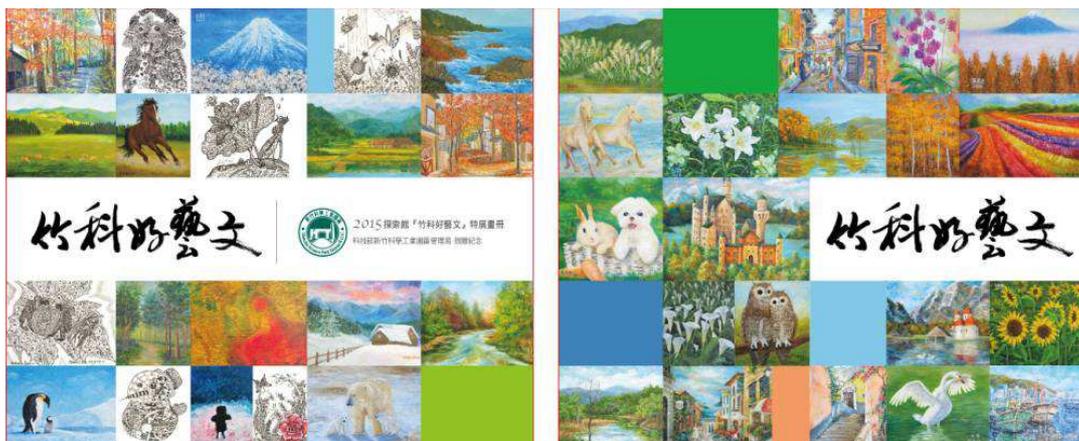
This exhibition demonstrated the close observation of technologists with regards to environmental protection, exotic cultures, nature, animals, and plants, and captured many beautiful moments in life. In this exhibition, most of the artworks were oil paintings; the subject matter included the Hsinchu Emei Lake, fishing boats anchored at the coastal harbor, European castles in autumn, snow-covered Fuji mountain in Japan, as well as a mother and baby polar bear standing in a field of snow. Each painting revealed the profound emotions that the artists felt toward the theme.



**(First from the left) Miin Wu,  
Chairman of Macronix and Education  
Foundation, congratulates the success of  
the Exhibition**



**Group photo of the artists**



**Artworks from the Exhibition**

## 8. Appendix

### 8.1. Sustainability Report Information

Welcome to the Macronix International Co., Ltd. (hereinafter “Macronix”) Corporate Social Responsibility (CSR) Report. The purpose of the CSR report is to provide the general public and all Macronix stakeholders a better understanding of our concerns and actions in 2015 with regard to sustainability and social responsibility. The report also shows our other commitments to various CSR matters and our performance in these areas.

#### **Reporting Period**

The report discloses Macronix's management guidelines, various CSR management topics, material issues, our corporate commitment, and the results of our CSR initiatives during the period of January 1 to December 31, 2015. The report is issued annually. (The next publication is scheduled for: June, 2017). There were no significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.

#### **Aspect Boundaries and Scope of the Report**

Macronix's corporate organization includes: corporate headquarters (including employee dormitories and the activity center), Fab 1, Fab 2, Fab 5, testing plant, and the Taipei office (please refer to section 2.2 for all global business locations).

The boundaries of the report include: Headquarters (address: No.16, Li-Hsin Road, Science Park, Hsinchu, Taiwan, R.O.C.), FAB 1 (address: No.3, Creation 3rd Road, Science Park, Hsinchu, Taiwan, R.O.C.), FAB 2 (address: No.16, Li-Hsin Road, Science Park, Hsinchu, Taiwan, R.O.C.), and FAB 5 (address: No.19, Li-Hsin Road, Science Park, Hsinchu, Taiwan, R.O.C.), Test Building (address: No.8, Creation 4th Road, Science Park, Hsinchu, Taiwan, R.O.C.).

## **Reporting and Third-Party Verification**

The report was written based on version 4.0 of the Global Reporting Initiative (GRI G4.0) and AA 1000APS(2008) standards, and was verified by a third party verification unit commissioned by the management representative. Bureau Veritas Certification (Taiwan) Co., Ltd. was entrusted with the evaluation of the report. The report was verified to comply with the requirements of the GRI G4.0 'core' option and AA1000AS: 2008 standards.

## **Contact information**

We sincerely welcome any comments and suggestions about the 2015 Macronix CSR Report.

Contact Person: Shao-Fei Wang, Project Manager of Safety & Health Center

Address: No.16, Li-Hsin Road, Science Park, Hsin-chu, Taiwan, R.O.C.

Tel: 886-3-5786688      Email:pubcsr@mxic.com.tw

## 8.2. Comparison Table of GRI G4.0 "Core" Option Compliance

### General Standard Disclosures

Representing the core options that must be disclosed

Strategy and Analysis					
G4 Index	Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
G4-1	Statement from the most senior decision-maker of the organization	1. Message from Macronix Executives	3~6	p.S1~S4	
G4-2	Provide a description of key impacts, risks, and opportunities: 1. Section One should focus on the organization's key impacts on sustainability and effects on stakeholders, including rights as defined by national laws and relevant internationally recognized standards. 2. Section Two should focus on the impact of sustainability trends, risks, and opportunities on the long-term prospects and financial performance of the organization. This should concentrate specifically on information relevant to financial stakeholders or that could become so in the future.	1. Message from Macronix Executives	3~6	p.S1~S4	Partial disclosure

Organizational Profile					
G4 Index	Index Definition	Related chapters	Page	External Assurance	Supplementary explanation

				/Guarantee	
G4-3	Name of organization.	8.1 Sustainability Report Information	119	p.S1~S4	
G4-4	Primary brands, products and services.	2.1 Products and Services	11	p.S1~S4	
G4-5	Location of organization's headquarters.	8.1 Sustainability Report Information	119	p.S1~S4	
G4-6	Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	2.2 Global Operations Centers	16	p.S1~S4	
G4-7	Nature of ownership and legal form.	5.1 Financial Performance	52	p.S1~S4	Please refer to the company's annual report
G4-8	Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	2.1 Products and Services	11	p.S1~S4	
G4-9	Report the scale of the organization.	2. Macronix	8	p.S1~S4	
G4-10	Report the total number of employees by employment type, employment contract, region, and gender.	7.1 Respect All Employees	73	p.S1~S4	
G4-11	The percentage of total employees covered by collective bargaining agreements.	7.1.2. Upholding Employee Rights	77	p.S1~S4	Macronix employees did not form a union, but employer-employee issues can be discussed

					during quarterly meetings by labor representatives on behalf of all full-time employees
G4-12	Describe the organization's supply chain.	4.4 Supply Chain Management	47	p.S1~S4	
G4-13	Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	8.1 Sustainability Report Information	119	p.S1~S4	No major changes
G4-14	Report whether and how the precautionary approach or principle is addressed by the organization.	4.2 Risk management, 6.4.1 Green Products	44, 70	p.S1~S4	
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	Each chapter	All	p.S1~S4	
G4-16	List memberships of associations (such as industry associations) and national or international advocacy organizations.	2.4 External Participations	20	p.S1~S4	

Identified Material Aspects and Boundaries					
G4 Index	Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
G4-17	a. List all entities included in the organization's consolidated financial statements or equivalent documents.	5.1 Financial Performance	52	p.S1~S4	Please refer to the company's annual report

	b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	5.1 Financial Performance	52	p.S1~S4	
G4-18	a. Explain the process for defining the report content and the Aspect Boundaries.	8.1 Sustainability Report Information,	119、21	p.S1~S4	
	b. Explain how the organization has implemented the Reporting Principles for Defining Report Content.	3. Sustainable Development Strategy	119、21	p.S1~S4	
G4-19	List all the material Aspects identified in the process for defining report content.	3.2.2. Identifying and Ranking Material aspects	29	p.S1~S4	
G4-20	For each material Aspect, report the Aspect Boundary within the organization.	3.2.2. Identifying and Ranking Material aspects	29	p.S1~S4	
G4-21	For each material Aspect, report the Aspect Boundary outside the organization.		29	p.S1~S4	
G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such statements.	Refer to each chapter for details	All	p.S1~S4	
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	3.2.2. Identifying and Ranking Material aspects	29	p.S1~S4	

Stakeholder Engagement					
G4 Index	Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
G4-24	Provide a list of stakeholder groups engaged by the organization.	3.2. Stakeholder Engagement	24	p.S1~S4	

G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	3.2.1. Stakeholder Identification and Interaction	24	p.S1~S4	
G4-26	Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	3.2.1. Stakeholder Identification and Interaction	24	p.S1~S4	
G4-27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.	3.2.1. Stakeholder Identification and Interaction	24	p.S1~S4	

Report Profile					
G4 Index	Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
G4-28	Reporting period (such as fiscal or calendar year) for information provided.	8.1 Sustainability Report Information	119	p.S1~S4	
G4-29	Date of most recent previous report (if any).	8.1 Sustainability Report Information	119	p.S1~S4	
G4-30	Reporting cycle (such as annual, biennial).	8.1 Sustainability Report Information	119	p.S1~S4	
G4-31	Provide the contact point for questions regarding the report or its	8.1 Sustainability Report	119	p.S1~S4	

	contents.	Information			
G4-32	a. Report the 'in accordance' option the organization has chosen.	8.1 Sustainability Report Information	119	p.S1~S4	
	b. Report the GRI Content Index for the chosen option.	8.2 Comparison Table of GRI G4.0 "Core" Option Compliance	121	p.S1~S4	
	c. Report the reference to the External Assurance Report if the report has been externally assured. GRI recommends the use of external assurance but it is not a requirement to be "in accordance" with the Guidelines.	8.3. Independent Third-Party Assurance Statement	143	p.S1~S4	
G4-33	a. Report the organization's policies and current practices for seeking external assurance for the report.	8.3. Independent Third-Party Assurance Statement	143	p.S1~S4	
	b. If not included in the assurance report accompanying the sustainability report, report the scope and of any external assurance provided.	N/A		p.S1~S4	
	c. Explain the relationships between the organization and its assurance providers.	8.3. Independent Third-Party Assurance Statement	143	p.S1~S4	
	d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report.	8.1 Sustainability Report Information	119	p.S1~S4	

Governance					
G4 Index	Index Definition	Related chapters	Page	External Assurance	Supplementary explanation

				/Guarantee	
G4-34	Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.	3.1. Sustainable Development System	22	p.S1~S4	
G4-51	a. Report the remuneration policies for the highest governance body and senior executives based on the following types	4.1.1. Governing Unit	37	p.S1~S4	
	b. Explain how performance criteria in the remuneration policy relate to the economic, environmental, and social objectives of the highest governing body and senior executives.				

Ethics and Integrity					
G4 Index	Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
G4-56	a. Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	Value: 2. Macronix - Mission Statement Principle: 4. Corporate Governance - Business Philosophies - Be Grounded Standard: 3.1 Sustainable Development System Code of Conduct: 4.1.3.	8, 22, 40	p.S1~S4	

		Management of Code of Conduct and Ethics			
G4-57	Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines.	4.1. Corporate Governance 3.2. Stakeholder Engagement 7.1.2. Upholding Employee Rights	36, 24, 77	p.S1~S4	
G4-58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.	4.1. Corporate Governance 3.2. Stakeholder Engagement 7.1.2. Upholding Employee Rights	36, 24, 77	p.S1~S4	

## Specific Standard Disclosures

Indicate the Material Aspect and disclosed index identified for this year

Disclosures on Management Approach					
G4 Index	Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
G4-DMA	a. Explain why the Aspect is material. Report the impacts that make this Aspect material.	Please refer to the chapters corresponding to each aspect	All	p.S1~S4	
	b. Explain how the organization manages the Material Aspect or its impacts.		All	p.S1~S4	
	c. Explain the evaluation of the management approach, including: <ul style="list-style-type: none"> <li>• Mechanisms for evaluating effectiveness of the management approach</li> <li>• Evaluation results of the management approach</li> <li>• Any related adjustments to the management approach</li> </ul>		All	p.S1~S4	

Economic Category					
G4 Index	Index Definition	Related chapters	Page	External Assurance	Supplementary explanation

					/Guarantee	
Economic Performance	G4-EC1	Direct economic value generated and distributed	5.1. Financial performance 7.1.3. Salary and Welfare Systems 7.4. Social Welfare	52, 81, 104	p.S1~S4	
	G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	NA			
	G4-EC3	Coverage of the organization's defined benefit plan obligations	7.1.2. Upholding Employee Rights	77	p.S1~S4	
	G4-EC4	Financial assistance received from government	5.1. Financial Performance	52	p.S1~S4	
Market presence	G4-EC5	Report the ratio of the entry level wage by gender at significant locations of operation to the minimum wage	7.1.3. Salary and Welfare Systems	81	p.S1~S4	
	G4-EC6	Percentage of senior management at significant locations of operation that are hired from the local community	NA			
Indirect economic impacts	G4-EC7	Development and impact of infrastructure investments and services supported	5.2. Indirect Impact on the Economy 7.4. Social Welfare	54, 104	p.S1~S4	
	G4-EC8	Significant indirect economic impacts, including the extent of the impacts	5.2. Indirect Impact on the Economy	54	p.S1~S4	
Procurement practices	E4-EC9	The percentage of the procurement budget used for significant locations of operations spent on suppliers local to that location	4.4. Supply Chain Management	47	p.S1~S4	

Environmental Category						
G4 Index		Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
Raw materials	G4-EN1	Materials used by weight or volume				
	G4-EN2	Percentage of materials used that are recycled input materials				
Energy	G4-EN3	Energy consumption within the organization	6.2.1. Energy Management	61	p.S1~S4	
	G4-EN4	Energy consumption outside of the organization	NA			
	G4-EN5	Energy Intensity	NA			
	G4-EN6	Reduction of energy consumption	6.2.1. Energy Management	61	p.S1~S4	
	G4-EN7	Reductions in the energy requirements of products and services	6.2.1. Energy Management	61	p.S1~S4	
Water	G4-EN8	Total water withdrawal by source	6.1.1. Water Resource Management	57	p.S1~S4	
	G4-EN9	Water sources significantly affected by withdrawal of water	6.1.1. Water Resource Management	57	p.S1~S4	
	G4-EN10	Percentage and total volume of water recycled and reused	6.1.1. Water Resource Management	57	p.S1~S4	
Biodiversity	G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas				None
	G4-EN12	Description of significant impacts of activities, products,				None

		and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas				
	G4-EN13	Habitat protected or restored				None
	G4-EN14	Total number of species included in the IUCN Red List and national conservation list with habitats in areas affected by the organization's operations, by level of extinction risk				None
Emissions	G4-EN15	Direct greenhouse gases (GHG) emissions (Scope 1)	6.2.2. Low-Carbon Management	65	p.S1~S4	
	G4-EN16	Energy indirect greenhouse gases (GHG) emissions (Scope 2)	6.2.2. Low-Carbon Management	65	p.S1~S4	
	G4-EN17	Other indirect greenhouse gases (GHG) emissions (Scope 3)	6.2.2. Low-Carbon Management	65	p.S1~S4	
	G4-EN18	Greenhouse gases (GHG) emissions intensity	6.2.2. Low-Carbon Management	65	p.S1~S4	
	G4-EN19	Reduction of greenhouse gases (GHG) emissions	NA			
	G4-EN20	Emissions of ozone-depleting substances (ODS)	NA			
	G4-EN21	NOx, SOx, and other significant air emissions	6.1.2. Air Pollution Prevention	58	p.S1~S4	
Effluents and Waste	G4-EN22	Total water discharge by quality and destination	6.1.1. Water Resource Management	57	p.S1~S4	
	G4-EN23	Total weight of waste by type and disposal method	6.1.3. Waste Management	60	p.S1~S4	
	G4-EN24	Total number and volume of significant spills	6.1.3. Waste Management	60	p.S1~S4	None
	G4-EN25	Weight of transported, imported, exported, or treated waste	NA			None

		deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally				
	G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	NA			None. The Company's wastewater is incorporated into the Science Park's underground water channel management
Products and Services	G4-EN27	Extent of impact mitigation of environmental impacts of products and services	6.4.1. Green Products	70	p.S1~S4	
	G4-EN28	Report the percentage of products sold and their packaging materials that are reclaimed by category	NA			No recycled packaging materials
Compliance	G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	4.1.5. Compliance with Regulatory Requirements	43	p.S1~S4	None
Transportation	G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce	6.1.2. Air Pollution Prevention	58	p.S1~S4	The process by which the company transports products and materials exerts no significant environmental

						impact
Overall Status	G4-EN31	Report the total environmental protection expenditures and investments by type	6.4.2. Green Procurement and Environment, Safety, and Health Costs Accounting Management System	72	p.S1~S4	
Supplier environment assessment	G4-EN32	Percentage of new suppliers that were screened using environmental criteria	4.4.2. Growing Together with Our Suppliers	50	p.S1~S4	
	G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	4.4.2. Growing Together with Our Suppliers	50	p.S1~S4	
Environmental Grievance Mechanisms	G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	6.1. Pollution Prevention	56	p.S1~S4	

Social Category - Labor practices and decent work						
G4 Index		Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
Employment	G4-LA1	Report the total number and rate of new employee hires during the reporting period, by age group, gender, and region	7.1.1. Recruitment	73	p.S1~S4	
	G4-LA2	Report the benefits which are standard for full-time employees of the organization but are not provided to	7.1.2. Upholding Employee Rights	77、81	p.S1~S4	

		temporary or part-time employees, by key locations of operation	7.1.3. Salary and Welfare Systems			
	G4-LA3	Return to work and retention rates after parental leave, by gender	7.1.3. Salary and Welfare Systems	81	p.S1~S4	
Labor/Management	G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	7.1.2. Upholding Employee Rights	77	p.S1~S4	Handled in accordance with the Labor Standard Act, and also coordinated during employer–employee meetings
Occupational health and safety	G4-LA5	Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and safety programs	7.3.2. Safety and Health Promotion Management	96	p.S1~S4	
	G4-LA6	Report types of injury, injury rate (IR), occupational diseases rate (ODR), lost day rate (LDR), absentee rate (AR) and work-related fatalities, for the total workforce, by region and gender	7.3.2. Safety and Health Promotion Management	96	p.S1~S4	
	G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	NA			
	G4-LA8	Health and safety topics covered in formal agreements with trade unions	NA			Macronix employees did not establish a

						union, but Macronix OSHEC convenes meeting at least once every quarter mainly to discuss environmental, safety, and health issues
Training and education	G4-LA9	Report the average hours of training that the organization's employees have undertaken during the reporting period, by gender and employee category	7.2.2. Macronix Academy	88	p.S1~S4	
	G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing lifelong careers	7.1.2. Upholding Employee Rights 7.3.1. Macronix H2O	77, 92	p.S1~S4	
	G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	7.2. Learning and Development	85	p.S1~S4	
Employment diversity and equal opportunity	G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	7.1.1. Recruitment	73	p.S1~S4	
Equal Remuneration for	G4-LA13	Ratio of basic salary and remuneration of women to men by employee category and by significant locations of				

Women and Men		operation				
Supplier Assessment for Labor Practices	G4-LA14	Percentage of new suppliers that were screened using labor practices criteria				
	G4-LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken				
Aspect: Labor practices grievance mechanisms	G4-LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	7.1.2. Upholding Employee Rights	77	p.S1~S4	

Social Category - Human rights						
G4 Index		Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
Investments	G4-HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	5.2. Indirect Impact on the Economy	54	p.S1~S4	There are no significant investments that are undergoing human rights screening in 2015
	G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	3.1. Sustainable Development System	22	p.S1~S4	All new employees have received SA8000 and EICC CoC training

Non-discrimination	G4-HR3	Total number of incidents of discrimination and corrective actions taken	7.1.2. Upholding Employee Rights	77	p.S1~S4	There were no incidents of discrimination in 2015
Freedom of Association and Collective Bargaining	G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	3.1. Sustainable Development System	22	p.S1~S4	The company respects employees' right to exercise freedom of association and collective bargaining
Child labor	G4-HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to effective abolition of child labor	3.1. Sustainable Development System	22	p.S1~S4	
Forced and compulsory labor	G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	4.4.2. Growing Together with Our Suppliers	50	p.S1~S4	
Security Practices	G4-HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	7.1.2. Upholding Employee Rights	77	p.S1~S4	
Indigenous rights	G4-HR8	Total number of incidents related to violations involving rights of indigenous peoples and corresponding actions taken	7.1.2. Upholding Employee Rights	77	p.S1~S4	There were no cases of violations involving rights of

						employees
Assess	G4-HR9	Total number and percentage of operations that have been subject to human rights reviews or impact assessments				Every six months, the Company conducts SA8000 internal auditing on all departments to examine employees' human rights reviews within the reporting boundary
Supplier human rights assessment	G4-HR10	Percentage of new suppliers that were screened using human rights criteria				
	G4-HR11	Significant actual and potential negative impacts for human rights in the supply chain and actions taken				
Human Rights Grievance Mechanisms	G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms				

Social Category - Society						
G4 Index		Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
Local communities	G4-SO1	Percentage of operations with implemented local	NA		p.S1~S4	The company

		community engagement, impact assessments, and development programs				primarily operates within the Hsinchu Science and Industrial Park, with the Hsinchu Science Park as the responsible assessment unit
	G4-SO2	Operations with significant actual or potential negative impacts on local communities	6.1.2. Air Pollution Prevention	58	p.S1~S4	
Anti-corruption	G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	4.1.3. Management of Code of Conduct and Ethics	40	p.S1~S4	Identification rate of all the departments in the Company 100%
	G4-SO4	Communication and training on anti-corruption policies and procedures	4.1.3. Management of Code of Conduct and Ethics	40	p.S1~S4	Training rate for all new hires 100%
	G4-SO5	Confirmed incidents of corruption and actions taken	4.1.3. Management of Code of Conduct and Ethics	40	p.S1~S4	None in 2015
Public Policy	G4-SO6	Total value of political contributions by country and recipient/beneficiary				There were no political contributions in

						2015
Anti-competitive behavior	G4-SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	4.1.5. Compliance with Regulatory Requirements	43	p.S1~S4	None in 2015
Compliance	G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	4.1.5. Compliance with Regulatory Requirements	43	p.S1~S4	None in 2015
Supplier social impact assessment	G4-SO9	Percentage of new suppliers that were screened using criteria for impacts on society				
	G4-SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken				
Grievance Mechanisms for Impacts on Society	G4-SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms				

Social Category - Product responsibility						
G4 Index		Index Definition	Related chapters	Page	External Assurance /Guarantee	Supplementary explanation
Customer health and safety	G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	NA			
	G4-PR2	Total number of incidents of non-compliance with	4.1.5. Compliance with	43	p.S1~S4	None in 2015

		regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	Regulatory Requirements			
Product and service labeling	G4-PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements	NA			
	G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	4.1.5. Compliance with Regulatory Requirements 6.4.1. Green Products	43, 70	p.S1~S4	None in 2015
	G4-PR5	Results of surveys measuring customer satisfaction	4.4.1. Sharing Beneficial Outcomes with Customers	49	p.S1~S4	
Marketing Communications	G4-PR6	Sale of banned or disputed products	NA			None in 2015
	G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes	NA			None in 2015
Customer privacy	G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	4.1.5. Compliance with Regulatory Requirements	43	p.S1~S4	None in 2015
Compliance	G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	4.1.5. Compliance with Regulatory Requirements	43	p.S1~S4	None in 2015

## 8.3.Independent Third-Party Assurance Statement



### INDEPENDENT ASSURANCE STATEMENT

To: The Stakeholders of MACRONIX INTERNATIONAL CO., LTD.

#### Introduction and objectives of work

Bureau Veritas Certification Taiwan has been engaged by MACRONIX INTERNATIONAL CO., LTD. to conduct an independent assurance of its CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2015. This Assurance Statement applies to the related information included within the scope of work described below.

This information and its presentation in the CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2015 are the sole responsibility of the management of MACRONIX INTERNATIONAL CO., LTD. Bureau Veritas was not involved in the drafting of the Report. Our sole responsibility was to provide independent assurance on its content.

#### Scope of work

The assurance process was conducted in line with the requirements of the Assurance Standard AA1000AS (2008) Type 1 with Moderate assurance. The scope of work included:

- Data and information included in CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2015 from 1<sup>st</sup> January, 2015 to 31<sup>st</sup> December, 2015;
- Appropriateness and robustness of underlying reporting systems and processes, used to collect, analyse and review the information reported;
- Evaluation of the Report against the main principles of the AA1000 Assurance Standard (2008)<sup>1</sup>
  - Inclusivity
  - Materiality
  - Responsiveness
- Evaluation of the Report against the principles of Stakeholder Inclusiveness, Sustainability Context, Materiality, Completeness, Balance, Comparability, Accuracy, Timeliness, Clarity, and Reliability, as defined in the GRI Sustainability Reporting Guidelines G4.

#### Methodology

As part of its independent assurance, Bureau Veritas undertook the following activities:

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<sup>1</sup> Published by AccountAbility: The Institute of Social and Ethical Accountability  
<http://www.accountability.org>





- Interviews with relevant personnel of MACRONIX INTERNATIONAL CO., LTD. - 12 employees interviewed, including remote interview;
- Review of documentary evidence produced by MACRONIX INTERNATIONAL CO., LTD.;
- Review performance data listed in report with sampling basis;
- Review of MACRONIX INTERNATIONAL CO., LTD. data and information systems for collection, aggregation, analysis and review.
- Site visit to headquarter and sites in Hsinchu, Taiwan;

Our work was conducted against Bureau Veritas' standard procedures and guidelines for external Assurance of Sustainability Reports, based on current best practice in independent assurance.

The work was planned and carried out to provide reasonable, rather than absolute assurance and we believe it provides a reasonable basis for our conclusions.

#### **Our findings**

On the basis of our methodology and the activities described above, it is our opinion that:

- The information and data included in CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2015 are accurate, reliable and free from material mistake or misstatement;
- The information is presented in a clear, understandable and accessible manner;
- MACRONIX INTERNATIONAL CO., LTD. has established appropriate systems for the collection, aggregation and analysis of relevant information;
- The Report properly reflects the organisation's alignment to and implementation of the AA1000 Assurance Standard (2008) principles of Inclusivity, Materiality and Responsiveness in its operations;
- The progress in managing material issues has been witnessed as part of the assurance.

#### **Alignment with the principles of AA1000AS (2008)**

##### **Materiality**

The Report addresses the range of environmental, social and economic issues of concern that MACRONIX INTERNATIONAL CO., LTD. has identified as being of highest material importance.

##### **Inclusivity**





MACRONIX INTERNATIONAL CO., LTD. has processes in place for identifying a range of key stakeholders including socially responsible investors, clients, employees, supply chain and local community; and, in this report, covering a range of aspects such as Economic, Social and Environment.

#### **Responsiveness**

MACRONIX INTERNATIONAL CO., LTD. is responding to those issues it has identified as material and demonstrates this in its policies, objectives, indicators and performance targets.

#### **Key areas for ongoing development**

Based on the work conducted, we recommend MACRONIX INTERNATIONAL CO., LTD. to consider the following:

- Top management involvement of social responsibility topics could be enhanced. (COMPLETENESS)
- The organization could extend the stakeholder engagement process to formally capture stakeholders' concerns and views in a structured manner across the organisation; (MATERIALITY)
- The business should continue its efforts in actively integrating principles of Corporate Responsibility into its management structures and day-to-day operations, by integrating them into existing management systems and business processes; (COMPLETENESS)
- The organization could improve the responsiveness to economic aspects that key stakeholders concerned. (RESPONSIVENESS)
- 

#### **Evaluation against Global Reporting Initiative (GRI) G4 Sustainability Reporting Guidelines**

Bureau Veritas undertook an evaluation of CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2015 against the G4 Sustainability Reporting Guidelines. This included cross checking the GRI index table against all the reference documents to provide an opinion on the self-declared GRI in accordance 'core' option.

Based on our work, it is our opinion that CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2015 has been prepared in accordance with the GRI Reporting Framework including appropriate consideration of the Reporting Principles and necessary indicators to meet the requirements of GRI in accordance 'core' option.

#### **Limitations and Exclusions**

Excluded from the scope of our work is any assurance of information relating to:

- activities outside the defined reporting period and scope;
- statements of position, opinion, belief and / or aspiration;
- any information hyperlinked from the web-based Report via <http://www.macronix.com/en-us/CSR/CSRReport/Pages/default.aspx>.



